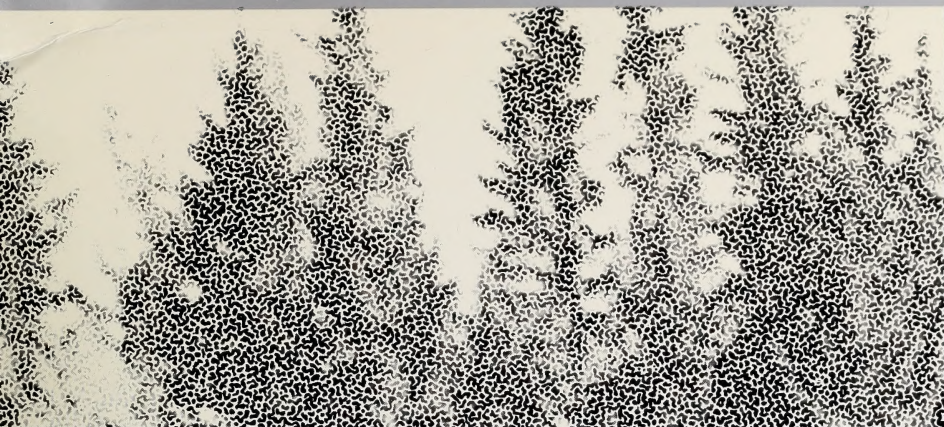


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FOREST DEVELOPMENT OPPORTUNITIES

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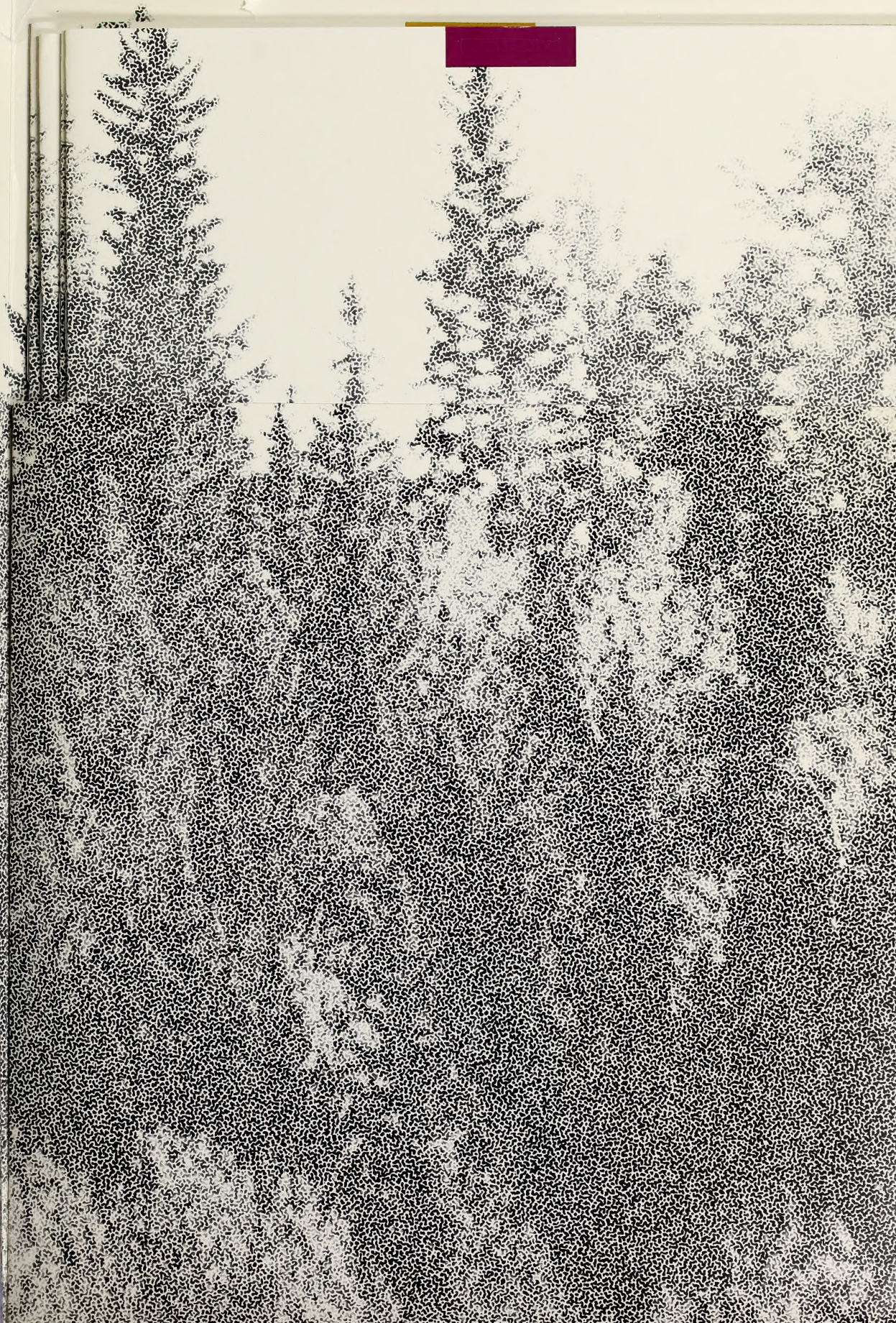




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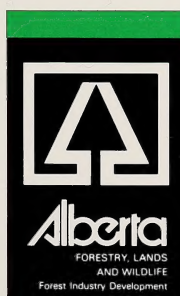


AND YOU.





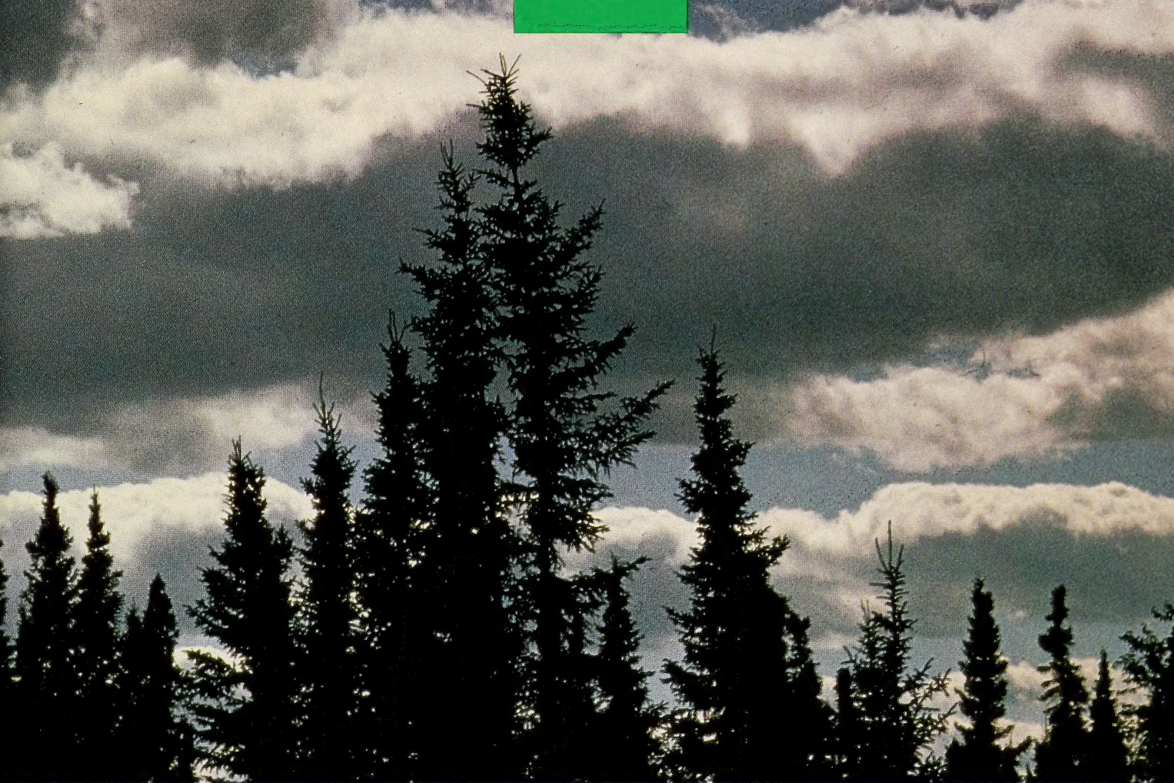
FOREST INDUSTRY DEVELOPMENT DIVISION





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FOREST INDUSTRY DEVELOPMENT DIVISION



"Ready for further development..."

Alberta's vast forest resources - covering almost two-thirds of the province - are ready for further development.

While the province already has a thriving forest industry that contributes over one billion dollars annually to the economy and directly employs more than 10,000 Albertans, the opportunities for new projects and expansion are almost limitless.

Now is the right time.

As part of its concerted program to expand and diversify the provincial economy, the Alberta Government is placing new emphasis on development of forest resources. To help bring about such development it has established the Forest Industry Development Division within the Department of Forestry, Lands and Wildlife.



FOREST OPPORTUNITIES



The Forest Industry Development Division is a team of specialists and problem-solvers with two main goals.

One is to increase utilization of Alberta's forest resources. The other is to encourage development of non-forest

resources on public lands.

Headed by an Executive Officer, the team includes experts in forest industry development, economic and financial analysis and forest products research and development.



The Alberta Government has made forest industry development a top economic priority.

OBJECTIVE: DEVELOPMENT

Working closely with related departments such as Economic Development and Trade and Treasury, the Division will provide information and advice, supply research data, identify opportunities, arrange meetings and help you to get fast answers from government.

The Division, which weighs each proposal on its own merits, can provide valuable assistance in arranging the financing of viable commercial projects. It will put developers in touch with the people and institutions that can provide the financing required to get a project off the drawing board and into production.

Assistance is also available for research and development projects and studies which could facilitate new commercial projects or help existing industries reach their full potential.

Check it all out with the helpful specialists in the Forest Industry Development Division.

"At your service..."

"At Your Service" could well serve as the motto for the Forest Industry Development Division. The Division stands ready to help industry representatives and investors wishing to participate in the development of Alberta's forests and its non-forest renewable resources.

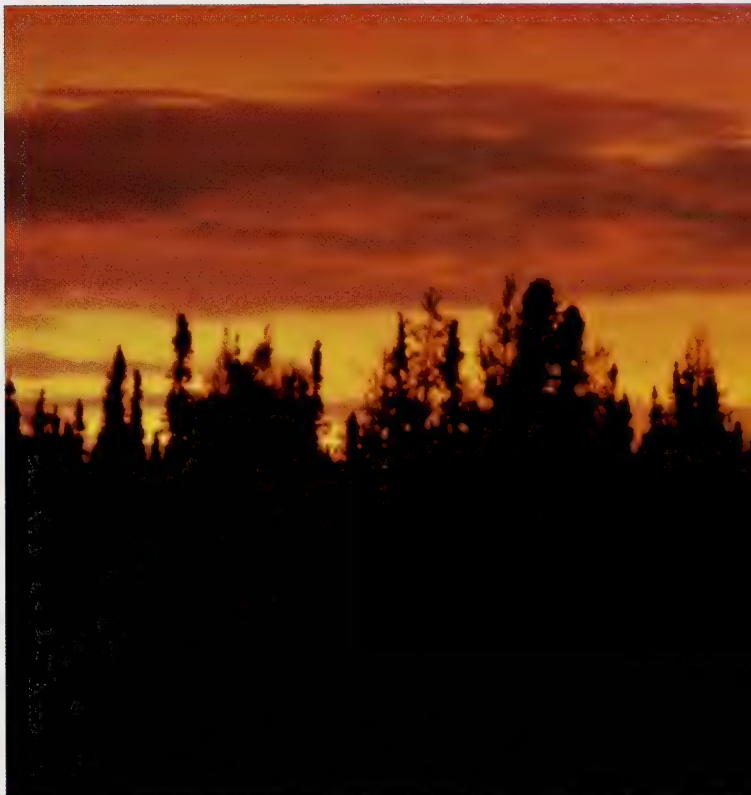


READY TO HELP

Alberta's forests present an exciting development prospect.



Consider this: Alberta has one of the largest uncommitted timber reserves in North America. Of the total standing timber volume of 2.66 billion cubic meters, only 62 per cent of the softwood forests are committed and just 11 per cent of the hardwood forests.



Opportunities are equally promising in non-forest renewable resources. Consider the market for tourism projects: each year tens of thousands of Canadian and international visitors are drawn to Alberta's forestlands by the appeal of majestic mountains, clear lakes and abundant wildlife. Working closely with the Department of Tourism,

the Division can help coordinate your investment interest in recreation and other non-forest resource opportunities.

But whether development proposals involve forest or non-forest resources, the Forest Industry Development Division can help make your projects a reality.

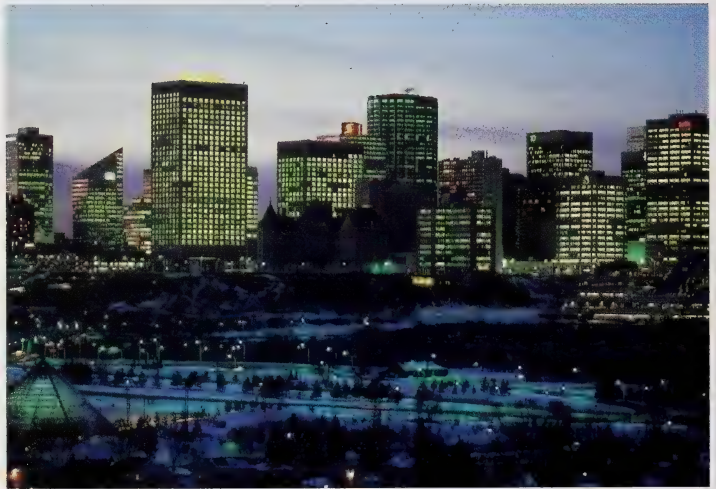
THE PROVINCE WITH POTENTIAL



- A network of roads and power lines is in place and modern towns and cities are close by to support development.
- Energy costs are among the lowest in North America and the province's corporate and personal income tax rates are lower than in most areas.
- Major transcontinental rail systems serve Alberta and spur lines reach most development areas.
- Stable labour relations provide an excellent working environment.
- Alberta has a modern forest management program that serves the interests of both industry and the general public.
- High quality timber can be delivered to the mill at a low cost.
- Abundant water sources and good mill sites, obtainable at a reasonable cost, are close to available timber supplies.
- Experienced contractors are available in all forestry development fields - roads, buildings, logging, hauling, general trucking - and they compete aggressively for projects.
- Important initiatives are being taken in the transportation field. These include upgrading gross vehicle weights to facilitate highway exports, encouraging the development of major transfer yards that access U.S. rail systems and supporting industry initiatives like the recent development of the Alberta Forest Products Shipper's Association.

"...a government that wants to help..."

Industry and investors interested in developing Alberta's forest resources will find the province has a great deal to offer in addition to large tracts of uncommitted timber.



WHY ALBERTA SHOULD BE YOUR



There is not a more favourable development climate to be found in Canada. Alberta, with its long-standing commitment to free enterprise, has a government that wants to help.

CHOICE

OBJECTIVES

The Objectives of this Division are to:

- (1) Increase and improve the utilization and development of Alberta's forest resources by providing assistance to viable projects.
- (2) Develop draft policies and develop cooperative efforts that would attract investments and private sector involvement in developing Alberta's non-forest renewable resources.
- (3) Increase employment opportunities through new enhanced developments.
- (4) Improve the competitiveness of the Alberta forest products industry.
- (5) Encourage and facilitate forest products research and development in Alberta.
- (6) Assist the primary and secondary forest product industry and the renewable resource industry in diversifying Alberta's markets through cooperative efforts with Economic Development and Trade, and other related departments or agencies.
- (7) Identify, promote and facilitate opportunities for private sector investment in both forest and non-forest renewable resources.
- (8) Increase public awareness of the forest products and renewable resource industries in Alberta and their potential for development.
- (9) Identify equity funding and other forms of financial assistance that could be available to a development proposal.

"want to know more?"

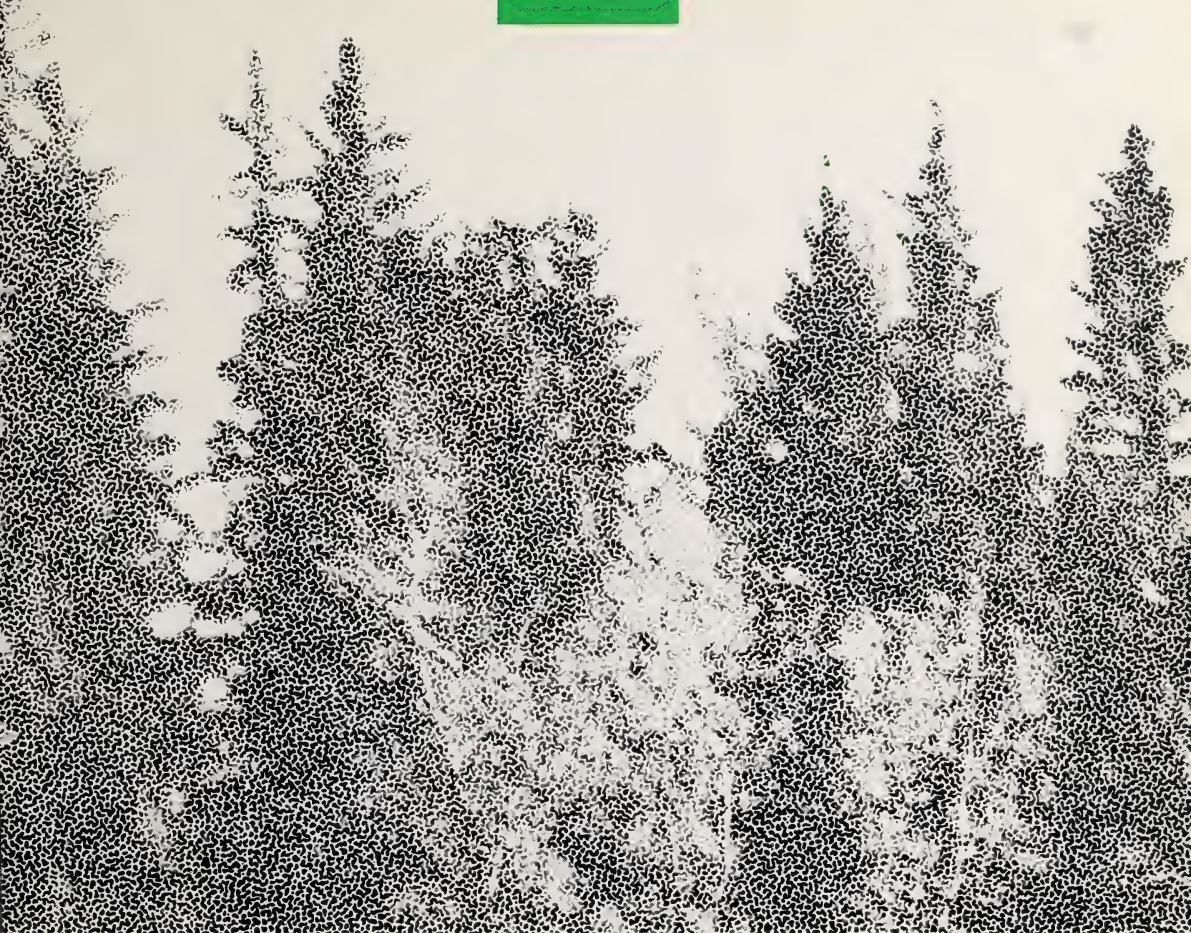
To get all the information on how the Forest Industry Development Division can help you, just write or telephone:

Forest Industry Development
Division
930, 108th Street Building
9942 - 108 Street
Edmonton, Alberta
T5K 2J5

Telephone: (403) 422-7011

WANT TO KNOW MORE?





FOREST MANAGEMENT AGREEMENT





THE FORESTS ACT, 1971

FOREST MANAGEMENT AGREEMENT (O.C. 608/80)

Approved and Ordered,
F. LYNCH-STANTON,
Lieutenant Governor.
Edmonton, July 2, 1980

Upon the recommendation of the Honourable the Minister of Energy and Natural Resources, the Lieutenant Governor in Council, pursuant to section 14(1) of The Forests Act, 1971, approves the entry by the Minister of Energy and Natural Resources into a forest management agreement with the company in accordance with the attached Appendix.

PETER LOUGHEED (Chairman)

MEMORANDUM OF AGREEMENT

BETWEEN:

HER MAJESTY THE QUEEN in right of the Province of Alberta, as represented by the Minister of Energy and Natural Resources, (hereinafter referred to as "the Minister"),

OF THE FIRST PART

AND

THE COMPANY

body corporate, registered under the laws of Alberta, with a business office in Pleasantview, Alberta, and its head office in Edmonton, Alberta (hereinafter referred to as "the Company"),

OF THE SECOND PART

WHEREAS the Company proposes to establish a major lumber production facility in the vicinity of , a major lumber production facility in the vicinity of and a paper or newsprint manufacturing complex in the vicinity of and .

WHEREAS the Minister desires to provide for the fullest possible economic utilization of forest stands and stable employment in local communities, and to ensure a perpetual supply of benefits and products while maintaining a forest environment of high quality;

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the premises, terms, conditions, covenants, stipulations, agreements and provisions herein contained, the Minister and the Company hereby agree as follows:

DEFINITIONS

1. (1) In this Agreement

- (a) "annual allowable cut" is the amount of coniferous timber that may be harvested in any one year as stipulated in the pertinent forest management plan approved by the Minister;
- (b) "bone dry unit" means 2400 pounds of wood chips of standard quality dried to a constant mass at 103 ± 2 degrees Centigrade;
- (c) "cubic metre" shall have the same meaning as that prescribed by the Timber Management Regulations;
- (d) "Department" means the Department of Energy and Natural Resources;
- (e) "dollar" means Canadian currency of the value of one Canadian dollar, or the equivalent value in any other currency;
- (f) "forest management area" refers to the tract of forest land over which the Company has been given management rights for establishing, growing and harvesting trees on a perpetual sustained yield basis for a defined period of time; and as specifically defined in paragraph 3;
- (g) a "merchantable coniferous stand" is a stand having 47.5 cubic metres or more per hectare of merchantable coniferous trees;
- (h) a "merchantable coniferous tree" is one having a minimum 15 centimetres diameter, measured outside bark at 30 centimetres above ground level, and having a minimum 3.66 metre useable length to a 10 centimetre top diameter, measured inside bark, unless otherwise specified in the ground rules;
- (i) "Scaling Regulation" means Alberta Regulation 336/79 authorized by Ministerial Order 40/79 and any amendments or substitutions thereto;
- (j) "periodic allowable cut" is the average of the annual allowable cuts approved for a five-year cut control period, weighted according to the time each allowable cut is in effect;
- (k) "Timber Management Regulations" means Alberta Regulation 60/73 authorized under Order-in-Council 309/73 and any amendments or substitutions thereto;
- (l) "Timber Regulations" means Alberta Regulation 61/73 authorized by Ministerial Order 14/73 and any amendments or substitutions thereto;
- (m) "working circle" means a part of the forest management area organized as a separate unit with its own annual allowable cut.

(2) The Forests Act, 1971, The Public Lands Act, and the regulations made thereunder shall mean for the purpose of this Agreement, those Acts and the regulations as each may from time to time be amended respectively or such Acts or regulations as may from time to time be substituted therefor, and terms defined by The Forests Act, 1971, The Public Lands Act, and the regulations made thereunder shall for the purpose of this Agreement, have the meaning given to them by those Acts and regulations as each may be amended or substituted from time to time.

- 2. (1) This Agreement shall commence on the 1st day of July, 1980 hereinafter referred to as the commencement date and shall expire on the last day of June, 2000 unless renewed under the provisions of subparagraph (3) or extended under the provisions of subparagraph (4).
- (2) It is the intention of the parties hereto to continue the rights of the Company under paragraph 7 to grow and harvest timber on the forest management area for additional terms of twenty years each not limited to the initial twenty year term of this Agreement if pursuant to paragraph 2 (3) mutual agreement thereon can be reached by the Minister and the Company and such agreement is approved by the Lieutenant Governor in Council.
- (3) Subject to the approval of the Lieutenant Governor in Council and provided that the Company is not in default on the expiry date as to any of the terms, conditions, stipulations, covenants, agreements and provisions of this Agreement, the Company shall be entitled to a renewal of this Agreement whereby its rights under paragraph 7 to grow and harvest timber are continued for a further term of 20 years on condition that mutually acceptable terms, conditions, stipulations, covenants, agreements and provisions including further renewal provisions or

other requirements can be renegotiated at the time of renewal. The Company shall give notice to the Minister of its desire to renew twelve months prior to the expiry date of this Agreement and within sixty days of receiving such notice the Minister shall commence discussions with the Company to negotiate the terms, conditions, stipulations, covenants, agreements, and provisions of the renewal agreement.

- (4) Notwithstanding subparagraphs (1), (2) and (3), if a renewal agreement cannot be agreed upon by the Company and the Minister and approved by the Lieutenant Governor in Council by the expiry date of this Agreement then this Agreement shall be extended for a further term of five years from that date with no further right of renewal or extension.

FOREST MANAGEMENT AREA

3. The Minister and the Company hereby mutually enter into a forest management agreement in respect of the forest management area comprising, subject to paragraphs 4, 5, and 6, public lands within the boundaries shown in a red outline on a map registered in the Department, a copy of which is annexed hereto as Appendix "A".
4. Out of the area shown within the boundaries outlined in red on Appendix "A" the following are excepted:
- (a) areas which are the subject of any timber dispositions issued pursuant to The Forests Act, 1971, prior to the date of this Agreement;
 - (b) lands which are the subject of a disposition issued pursuant to The Public Lands Act, prior to the date of this Agreement;
 - (c) lands heretofore sold, patented, licensed, leased or applied for in respect of which any disposition is pending; and
 - (d) the beds and shores of all streams, rivers and lakes extending up to the high water mark.
5. Whenever any of the land excepted or subsequently withdrawn from the forest management area becomes available for disposition, such land shall be added to the forest management area and form a part hereof.

WITHDRAWALS

6. (1) the Minister may, at any time and from

time to time in his discretion, after discussion with the Company with respect to the effect any such withdrawal may have on the forest management area, either permanently or for a specified term, withdraw from the forest management area:

- (a) any land which cannot be logged without causing substantial harm to the water table or to lakes, rivers, streams or other bodies of water, to the margins of water courses or to roads; and
 - (b) any lands required for rights-of-way, water resource development or for any other purposes deemed by the Minister to be essential for the human or physical resource development of the Province.
2. A withdrawal shall take effect
- (a) on the date the notice of withdrawal is given by the Minister to the Company, or
 - (b) where the notice given states that the withdrawal shall take effect at a future date, on the date stated in the notice.
3. When the net aggregate area of lands withdrawn from the forest management area exceeds 2% thereof, the Minister shall replace such excess by adding an area from the nearest available public timber lands equivalent to such excess area.
4. In the event from time to time of any withdrawal or withdrawals of land from the forest management area by the Minister:
- (a) for disposition to users other than the Crown, the Company, in addition to any right pursuant to paragraph 6 (3), shall be entitled to reasonable compensation from the users for any loss of profit or other damage or loss suffered by the Company, including by way of example, but without limitation, damage to timber, improvements, regeneration, forest growth, or to its operation on the forest management area resulting from such withdrawal.
 - (b) for use by the Crown wherein the net aggregate area withdrawn does not exceed 2% of the forest management area, the Minister shall determine the compensation and arrange for reimbursement to the Company for the actual loss or damage resulting from such withdrawal to any improvements created by the Company's efforts, but not for any loss of profit, inconvenience nor increased costs reasonably incurred

- by the Company in harvesting an equivalent volume of timber elsewhere;
- (c) for use by the Crown wherein the net aggregate area withdrawn does exceed 2% of the forest management area, the Minister shall determine the compensation in respect of such excess and arrange for reimbursement to the Company, for any loss of profit or other damage or loss suffered by the Company, including damage to timber, improvements, regeneration, forest growth, its operations on the forest management area adjusted for the value of any timber on lands replaced pursuant to paragraph 6 (3) after considering increased costs reasonably incurred by the Company in harvesting an equivalent volume of timber on the substituted lands.

RIGHTS OVER THE LAND

7. (1) Subject to all the terms and conditions of this Agreement the Minister grants to the Company the rights, during the term of this Agreement, to establish, grow and harvest timber on the forest management area on a perpetual sustained yield basis, with such rights to include, but not be limited to.
- (a) the right during the term of this Agreement to enter and occupy the forest management area for the purposes referred to in clauses (b), (c) and (d);
- (b) the right during the term of this Agreement to grow, cut and remove timber on and from the forest management area;
- (c) the right during the term of this Agreement to carry out reforestation and other programs that are approved by the Minister in accordance with this Agreement; and
- (d) the right during the term of this Agreement to construct, operate and maintain roads, wood concentration yards and other installations necessary and incidental to the Company's logging and silvicultural operations on the forest management area.
- (2) For the purpose of interpreting The Surface Rights Act, or as amended, the Company is an occupant of the public lands comprising the forest management area.
- (3) The Minister shall cause land dispositions required within the forest management area for work such as roads, bridges, and other necessary works incidental to the Company's logging and silvicultural operations to be issued to the Company without any dues, fees or rental charges being paid but such dispositions shall otherwise be subject to any pertinent regulations.
- (4) Notwithstanding subparagraph (3), sand and gravel excluding in situ right-of-way material used in the immediate area where it is found, needed by the Company for its operations under this Agreement shall be obtained by the Company pursuant to the Surface Materials Regulation, subject to the payment of the fees and royalties prescribed in the Regulation.
- (5) The Minister shall cause the sale to the Company of up to 122 hectares of land as may be required by the Company in Sections and, Township Range , West of the 6th Meridian, at a price of \$ per hectare.
8. (1) In keeping with the policy for multiple use of the public land, the Minister reserves all land rights on the forest management area not specifically given hereby to the Company in this Agreement, including by way of example, but without limiting the generality of the foregoing;
- (a) the rights of others to travel, hunt, fish, and otherwise use the said lands for recreational purposes, or to trap, subject to any necessary restrictions for the purpose of prevention of accidents, fire control and seasonal protection of roads;
- (b) the rights to authorize any person to conduct any work in connection with or incidental to geological exploration pursuant to The Mines and Mineral Act, or the Exploration Regulation; provided that the Company shall be entitled to reasonable compensation, from the person conducting the exploration, for any loss or damage suffered by the Company and resulting from such exploration including by way of example but without limitation, for any damage to timber, forest growth, regeneration, improvements or to any of its operations on the forest management area; and

- provided that the Company shall not be entitled to compensation for damage to coniferous or deciduous timber or forest growth caused by any such geological or geophysical exploration on areas placed under timber licence or permit;
- (c) the right to maintain and enhance fish and wildlife resources;
 - (d) the right to authorize domestic stock grazing, provided that coniferous regeneration will not be unduly damaged.
- (2) The Minister also reserves the following rights to the timber on the forest management area after consulting with the Company;
- (a) the right to issue timber permits, not exceeding one year in duration, to provide timber for local use in construction and maintenance of public works by any local authority, municipality, county, the Crown in right of Alberta or Canada, and for the local residents for their own use and sale, provided the total volume of coniferous timber cut under authority of such permits on the forest management area in any timber operating year does not exceed one-half of one percent (0.5%) of the approved annual allowable cut of coniferous timber;
 - (b) the right to issue licenses and permits to those quota holders listed in Appendix B to maintain their operations after the commencement of this Agreement, but shall not:
 - (i) issue any new or additional quota certificates except one incorporating the agreed increase to the timber quota
 - (ii) increase any quota; except for the agreed increase to the timber quota in Management Unit
 - (iii) increase the authorized volume to be cut under any quota until April 30, 1986, except that until April 30, 1986, a quota holder may cut quota free timber from within stands scheduled in support of the quota by cutting trees of smaller size and to a smaller top diameter than presently stipulated in the quota certificate;
 - (c) the right to use deciduous timber allocations, licenses, and permits.

FOREST MANAGEMENT

A. General Provisions

9. On the forest management area the Company shall:
- (a) follow sound forestry practices with the purpose of achieving and maintaining a perpetual sustained timber yield from the productive forest land, while not diminishing the productivity of the land, and
 - (b) harvest the annual allowable cut of merchantable coniferous trees from merchantable coniferous stands in accordance with paragraph 12.
10. For the purpose of forest management planning, timber harvest operations and cut control, the Company shall divide the forest management area into two distinct working Circles — a Working Circle and a Working Circle — on the condition that the allowable cut from each working circle will support the Company's manufacturing facility or facilities located within or adjacent to that respective working circle. At the request of the Company, the boundary line separating the above two working circles may be altered in future forest management plans provided that the above condition is satisfied.
11. (1) Not more than twelve months following the commencement date of this Agreement and in any case before the commencement of woods operations, the Company shall submit for the Minister's approval two preliminary forest management plans describing the methods it will follow in managing each of the working circles of the forest management area on a sustained yield basis and establishing a preliminary estimate of the sustainable annual allowable cuts, for each working circle, and until the plan for a working circle is approved by the Minister the Company shall not commence woods operations in that working circle.
- (2) Not more than three years after the commencement of harvesting timber for mill operations, the Company shall submit to the Minister a detailed forest management plan describing the methods it will follow in managing the forest management area on a sustained yield basis for a period equivalent to one approved full rotation and this plan upon approval by the Minister shall replace the preliminary plan. The plan shall include yield projections for a

period equivalent to at least one full rotation plus a harvest schedule and road development plan for the duration of the Agreement. The Company shall specify in their detailed management plan the amount of annual allowable cut of each working circle which will be allocated to supply the Company's manufacturing facilities in the

area and the amount to supply the Company's manufacturing facilities in the area.

Cut controls specified in paragraph 12 shall be applied to the allowable cut of each working circle separately.

- (3) Not later than the tenth anniversary date of this Agreement the Company shall submit for the Minister's approval a revised detailed management plan, and this revised plan when approved will replace that supplied under subparagraph (2).

- (4) The Minister may require the Company to alter any of the methods described in its preliminary plan or detailed management plans before his approval may be given.

- (5) Before the preliminary plan is approved by the Minister the parties hereto must formulate a set of ground rules for creating the basis of the preliminary and the detailed management plans, and the annual operating plans required under paragraph 13, or any revisions thereof. In the event that an initial set of ground rules cannot be established by mutual agreement within six months of the commencement date of this Agreement, the Minister shall, within the following 30 days, unilaterally establish a set of ground rules.

- (6) The ground rules shall be reviewed by the parties hereto at the request of either party; however the Company cannot alter the ground rules without the consent of the Minister; whereas the Minister may alter the ground rules without the consent of the Company provided there is full consultation with the Company prior to any change and provided the Company received written notice six months in advance of any change.

12. (1) The term of the Agreement shall be divided into four cut control periods each with a duration of five years. The annual allowable cuts shall be calculated

for the Grande Cache and Fox Creek working circles separately, as specified in paragraph 11, and shall be recalculated when requested by the Minister and not later than by the end of the second control period.

- (2) The required production from each working circle in each period shall be controlled as follows:

CUT CONTROL PERIOD	WORKING CIRCLES	REQUIRED MINIMUM VOLUME OF TIMBER TO BE CUT IN THE PERIOD
First		50% of the Periodic Allowable Cut 20% of the Periodic Allowable Cut
Second	Both	85% of the Periodic Allowable Cut
Third	Both	85% of the Periodic Allowable Cut
Fourth	Both	85% of the Periodic Allowable Cut.

- (3) If the Company does not harvest the required minimum volumes of timber specified in subparagraph (2) during the relevant period, the Minister may during the subsequent period make the entire unused volume available to operators other than the Company or may allocate this unused volume to the Company if the Company submits a program satisfactory to the Minister making up the shortfall in the subsequent five-year period.

- (4) If the Company overcuts the periodic allowable cut by more than 15% the Minister may reduce the allowable cut during the subsequent period by an amount equivalent to the entire overcut volume.

13. (1) The Company shall forthwith upon the commencement of this Agreement establish a forest management operating year that shall commence and end on dates approved by the Minister.

- (2) Not less than four calendar months before the commencement of each forest management operating year or within such shorter period as may be permitted in writing by the Minister, the Company shall submit to the Minister an operating plan and this plan will include the reforestation and forest protection plans and plans of the supplemental programs required under paragraphs 26, 28 and 29 covering the next ensuing forest

- management operating year.
- (3) Each operating plan shall be in accordance with and include a two year operating projection showing the entire harvesting operation intended by the Company to be implemented during the next ensuing two forest management operating years.
 - (4) The Minister may approve such plans as are submitted, or may require the Company to alter any aspect of harvesting operations described in the plans, provided that the Minister shall not thereby alter the ground rules in effect at the time made pursuant to paragraph 11 and acts promptly so as to avoid delay in the Company's operations.
 - (5) When the operating plan does not provide for the salvage of dead, damaged, diseased or decadent timber, the Minister may give notice to the Company that he requires provision for its salvage in such plan. The Company shall have thirty days from the date on which such notice is given to it by the Minister within which to amend the plan, or to justify the exclusion of such timber from its plan, but if it fails or elects not to do either within such period, the Company shall not be deemed to be in default and the Minister may dispose of such timber to any person by permit without compensating the Company.
 - (6) Each operating plan shall incorporate other resource needs and in so doing minimize the adverse impact on such public resources as fish and wildlife throughout the forest management area.
14. When, in the opinion of the Minister, any plan approved by him becomes obsolete or inadequate, he may, by reasonable notice in writing, require the Company to submit a revised plan for his approval within a specified time or, within any extended time he may subsequently allow.
 15. The Company may not commence or carry on any construction project or any operation on the forest management area until the relevant plan which is required to be submitted pursuant to paragraphs 11, 12, 13 and 14 has been submitted by the Company and approved in writing by the Minister; and the Company may not digress from the approved plans without the Minister's consent in writing, with the understanding that the Minister shall provide a full explanation whenever consent is withheld.
 16. The Company shall at its own expense make such surveys of the forest management area as are necessary to prepare the plans required by paragraphs 11, 12, 13 and 14.
 17. The Company shall utilize all the merchantable coniferous trees growing within merchantable coniferous stands cut in road construction and other incidental operations of the Company unless otherwise permitted in writing by the Minister.
 18. The Company shall conduct woods operations and manufacturing operations in such a manner as to achieve the highest degree of economic utilization of the timber on the forest management area and shall not commit acts of waste in respect of such timber.
 19. (1) Commencing not more than twelve months following the completion date set for the paper mill in paragraph 38, the Company shall endeavour to purchase annually from quota holders and permittees within the Province a minimum of 50,000 bone dry units of wood chips provided they are offered to the Company at a price not exceeding the weighted average price received for wood chips of equal quality at producing sawmills in Alberta and provided they possess a standard of quality suitable for the manufacture of the paper products produced by the Company.
 - (2) The Company shall use every reasonable effort to accept roundwood if required by the Company and if offered to the Company, at prevailing market prices, from quota holders and permittees within the Province if the roundwood possesses a standard of quality suitable in the opinion of the Company for manufacture in facilities of the Company.
 20. (1) The Company shall make its wood chips from the sawmill available for sale under a contract ("Chip Contract") with an initial term of 10 years to another company at a price f.o.b. the sawmill which does not exceed the weighted average price received at producing sawmills in Alberta for wood chips of equal quality.
 - (2) (a) If, by December 31, 1985, the company has not expanded or begun construction of an expansion to the pulp production facilities which exist at

on the commencement date of this Agreement with a design capacity sufficient to utilize the entire wood chip volume available under the Chip Contract, the Company's obligation to sell chips to the company shall not extend beyond the initial term of the Chip Contract;

- (b) If the company has expanded or begun construction of the pulp expansion described in paragraph 20(2)(a) by December 31, 1985, the Company shall extend the term of the Chip Contract described in paragraph 20(1) to the expiry date of this Agreement, and include a right of renewal clause providing for an additional term of 20 years subject to the renewal of this Agreement under the terms of paragraph 2(3).
 - (3) For the duration of the Chip Contract established under paragraph 20(1) and any extension or renewal to it under paragraph 20(2)(b), the Minister shall, at the request of the Company, assist the Company to purchase an annual volume of 50,000 bone dry units of wood chips of a quality acceptable to the Company by requiring quota holders selected by the Minister from within the Forests to offer such chips to the Company for use at its mill at prices which do not exceed the weighted average price received at producing sawmills in Alberta for wood chips of equal quality.
 - (4) (a) In the event that a quota holder who has entered into a contract to sell chips to the Company under the provisions of paragraph 20(3) fails to deliver the chip volumes specified in the contract, the Minister shall require the quota holder to make up the shortfall within six months. At the end of the six month period, the Minister shall require the quota holder to harvest and deliver, within 90 days of being advised to do so, a volume of merchantable coniferous trees which is equivalent to the volume of chips remaining undelivered. The Company shall pay for such trees on the basis of their chip content, assuming that one bone dry unit of chips is equivalent to 2.83 cubic metres of roundwood;
 - (b) In the event that a quota holder refuses to meet the requirements of the Minister under paragraph 20(4)(a), the Minister shall authorize the Company to enter onto the timber licences held by the quota holder and remove a volume of merchantable coniferous trees which is equivalent to the volume of chips remaining undelivered without making any payment to the quota holder for such trees; provided, however, that the Company shall pay timber dues to the Minister at the rates prescribed for the timber licences from which the timber was taken.
 - (5) If the company expand or begin construction of the pulp expansion described in paragraph 20(2)(a) prior to December 31, 1985, the Minister shall, within 90 days of confirming that construction of the pulp expansion has commenced, add to the forest management area that area designated as on the map annexed hereto as Appendix "A".
- 21. The Company shall not hinder or obstruct the lawful timber operations of licensees and permittees.
 - 22. The Minister shall consult with the Company concerning proposed areas and methods of harvesting by the aforesaid timber licensees and permittees in the forest management area before designating the areas in which their operation may be carried on and the Company shall suggest in its annual operating plans for the Minister's approval areas available for harvesting by timber licensees and permittees.
 - 23. The Minister shall require timber licensees and permittees operating within the forest management area to conduct all harvesting operations in accordance with sound forestry practices and to refrain from hindering or obstructing the lawful operations of the Company.

B. Reforestation

- 24. (1) The Company shall be obliged to progressively reforest at its own expense all land cut over by the Company and shall describe its reforestation program in its management and annual operating plans.
- (2) For the purpose of the reforestation requirements, "year" shall mean the period from May 1st to April 30th until such time as the phrase "timber year" is defined in the Timber Management

- Regulations and from that time on shall have the same meaning as may be thereby ascribed to that phrase.
- (3) Considering the year of cut or, in the case of supplemental reforestation areas the year of treatment, as being the first year, the Company shall Complete a reforestation survey which meets the specifications of the Minister for all areas that it is obliged to reforest and submit same to the Minister by the end of the seventh year.
- (4) In this Agreement the required reforestation standard means the reforestation standard set out in the Timber Management Regulations as amended from time to time or in any regulations passed in substitution thereof.
- (5) Where the Company fails to reforest any area it is obliged to reforest to the required reforestation standard by the end of the tenth year the Minister may suspend timber harvesting operations until the Company has complied with any direction received from the Minister in relation to the reforestation of the area.
25. (1) As part of its operations under this Agreement the Company shall, at its sole expense, furnish all of the seedling trees required for its reforestation needs.
- (2) Seedling trees for reforestation shall be grown and produced within the Province of Alberta.
- (3) The Minister shall, without charge to the Company, extract seed from any seed bearing cones supplied by the Company and store such seed for delivery to the Company on demand.
26. (1) The Company and the Minister shall devise program on and implement a reforestation lands in the forest management area capable of supporting tree growth on which the timber was cut over by individuals other than quota holders or the Company prior to this Agreement or destroyed at any time by natural agencies, including but not limited to, natural occurring fires or fires of the type referred to in paragraph 28(1), or disease, and which nature has failed to restock to the required reforestation standard (hereinafter referred to as "supplemental reforestation"). Lands acceptably stocked with deciduous timber shall not be considered as under-stocked for these purposes.
- (2) The Company and the Minister shall each undertake to effect one-half of the supplemental reforestation program.
- (3) Over any five year period the average annual supplemental reforestation will be one-twentieth of the total area found to be understocked, subject however to the maximum limitations set out in paragraph 27.
- (4) The supplemental reforestation program shall be included in the Company's annual operating plan submission.
27. (1) The maximum supplemental reforestation that the Company and the Minister jointly may be required to carry out during any operating year shall not exceed 25% of the total area harvested for coniferous timber by the Company in the immediately preceding operating year.
- (2) The Minister may direct in any operating year that the maximum supplemental reforestation program are be reduced to the extent necessary to fit the Minister's estimated departmental budget for that purpose.
28. (1) The Company shall not be required to reforest lands cut- over or burned after the commencement date of this Agreement by persons other than the Company, its agents or contractors.
- (2) Notwithstanding paragraph 26(1), the Company shall be solely responsible for reforesting all lands burned by fire, when the fire has been caused by the Company, its employees, its agents or its contractors.
29. (1) Where in any operating year the Company's share of the cost under supplemental reforestation programs is less than 15% of the amount the Company paid in the previous year for timber dues in accordance with paragraph 33, the Company shall carry out or support programs to improve the fish and wildlife habitat or recreational opportunities within the forest management area, providing such programs meet with the approval of the Associate Minister of Public Lands and Wildlife in the case of fish and wildlife habitats and the Minister in the case of recreational opportunities.
- (2) The Company's expenditure under subparagraph (1) shall not be less than the difference between 15% of the amount the Company paid in the previous year for timber dues and the Company's share of the cost under any supplemental reforestation programs in the current year.
30. If the Company desires to implement, at its own cost, more intensive silvicultural practices than required by the Minister under this Agreement, such as spacing,

fertilization, genetics and drainage, the Company and the Minister may enter into an agreement which will define the programs and conditions that, in the Minister's opinion, will establish a sustainable increase in allowable cut. Where the Company implements the program under the terms of such an agreement, and where the Minister and the Company agree on the amount of additional allowable cut which will result from the Company's silvicultural efforts over and above those required under the Forest Management Agreement and The Forests Act, 1971, then such additional cut shall be offered by the Minister to the Company free of timber dues providing the Minister has been duly authorized to do so by a regulation passed under section 4 of The Forests Act, 1971.

C. Forest Protection

31. (1) The Minister agrees to provide and maintain an organization of men and equipment necessary for the protection of the forest from and suppression of forest fires on the forest management area and, except as herein otherwise provided, to pay the cost of fighting any forest fire that originates on the forest management area on the understanding that the Minister will not be liable for damages to the Company resulting from a failure to prevent, control or suppress any fire.
- (2) Notwithstanding subparagraph (1), the Company shall pay the cost of suppressing any forest fire that originates on the forest management area if the fire is caused by or arises out of any of the operations or activities conducted on the forest management area by the Company, its employees, agents or contractors; provided, however, that in no event shall the liability of the Company exceed the liability provided for in a separate Fire Control Agreement which may be negotiated and entered into by the Minister with the Company. Until such time as a Fire Control Agreement has been entered into, the Company agrees to have on hand in good working order such fire fighting equipment and shall train such employees in fire suppression as specified by the Minister. If the cause of any fire is disputed by the Company, the dispute shall be resolved by means of civil suit in the Courts of Alberta.

- (3) Notwithstanding anything contained in this Agreement, the Company shall not be liable for loss of or damage to Crown timber by fire that is caused by or arises out of any of the operations conducted on the forest management area by the Company, its employees, agents or contractors.
- (4) In the event of an occurrence of insect damage of epidemic nature to forest growth or a disease epidemic affecting forest growth on the forest management area the parties hereto will co-operate in suppressing the epidemic.

RECORDS AND SCALING

32. (1) All scaling, measuring and weighting of timber shall be performed by the Company.
- (2) All scaling and measuring of timber weights and volumes shall be conducted in accordance with the Timber Regulations, the Scaling Regulation and the published instructions of the Department.
- (3) The Company shall maintain in the form and in the manner approved by the Minister complete and accurate records of the operations it conducts on the forest management area.
- (4) The Minister, or any person authorized by him, may inspect the records maintained by the Company pursuant to subparagraph (3).
- (5) The measurement of the volume of all wood cut by or for the Company and sold to others or purchased by the Company may be determined, at the option of the Company, by physical measurement of said wood or by derivation of volume/weight factors by sampling in the manner prescribed by the Minister from time to time.
33. (1) Within 21 days of the termination of every three month period, the Company shall submit to the Minister in writing, on a form prescribed by the Minister, a return reporting for each such period:
- (a) the volume of timber cut by and for the Company for each working circle;
 - (b) for each working circle the volume of timber cut or destroyed by others for which the Company is entitled to compensation under this Agreement;
 - (c) the volumes of primary timber products manufactured and sold by and for the Company from each of its

manufacturing facilities within the Province; and

- (d) the volume of timber and primary timber products purchased for use in its mills in Alberta and sold by the Company, from its operations in Alberta, the names of all persons from whom timber was purchased, to whom timber was sold, and the land from which the timber was cut.

- (2) Unless otherwise directed in writing by the Minister, the Company shall remit to the Minister with each timber return the amount of all dues payable for the volume of timber shown in such returns as required by paragraph 33 (1).

CHARGES AND DUES

34. (1) On the commencement date of this Agreement and thereafter on each anniversary date during the term of this Agreement, the Company shall pay to the Minister:
- (a) a holding charge, and
 - (b) a forest protection charge for every square kilometre, to the nearest square kilometre, within the forest management area on the first of the month immediately preceding the date the payment is due.
- (2) Initially, on the commencement date of this Agreement the charges in subparagraph (1) will be:
- (a) a holding charge of \$1.16 per square kilometre, and
 - (b) a forest protection charge of \$13.59 per square kilometre.
- (3) Subsequent holding charges and forest protection charges shall be adjusted annually on the anniversary of the commencement date of the Agreement using the Annual Implicit Price Index for government current expenditure in goods and service, as published by Statistics Canada, in the following formula:

$$\begin{array}{rcl} \text{Charge for} & & \text{Index for Year prior to} \\ \text{Year} & & \text{Year of} \\ \text{of Payment} & = & \text{Charge for} \times \frac{\text{Payment}}{\text{Index for Second}} \\ & & \text{Previous} & & \text{Year Prior to} \\ & & \text{Year} & & \text{Year of Payment} \end{array}$$

Example

- (a) 1980 Holding Charge =

$$\$1.16 \times \frac{1979 \text{ Index}}{1978 \text{ Index}}$$

- (b) 1980 Forest Protection Charge =

$$\$13.59 \times \frac{1979 \text{ Index}}{1978 \text{ Index}}$$

In the event that the Annual Implicit Price Index is no longer published or in the event of a change in the method used to calculate the Index, the Minister and the Company shall mutually and reasonably agree on a comparable published index to be used in the above formula.

- (4) The amounts of annual holding charges and forest protection charges payable to the Minister by quota holders within the forest management area will be deducted from the amounts calculated in subparagraph (3).
35. The Company shall pay dues in accordance with this Agreement in respect of all timber for which the Company is entitled to compensation and in respect of all timber cut by and for the Company on the forest management area.
36. Timber dues are payable to the Minister under paragraph 35 at the General Rates of Crown Dues for coniferous timber as established pursuant to the Timber Management Regulations.
37. The Minister has, in addition to any rights and powers conferred on him by this Agreement, all the rights and powers for enforcing the payment of Crown charges that are provided for pursuant to The Forests Act, 1971.

MILL CONSTRUCTION AND OPERATION

38. (1) Not more than four calendar months following the commencement date of this Agreement the Company shall commence construction of a sawmill-planer complex in the vicinity of
- with a capacity to produce a minimum of 80 million board feet of lumber annually and include machinery for the recovery of wood chips of a type and quality suitable for the manufacture of wood pulp of high quality, with provisions to base supervisory staff, forestry and logging crews in the vicinity of
- to the extent that the Company will establish operations capable of providing for the employment of 360 persons not later than January 1, 1983.
- (2) Not later than July 1, 1981, the Company



shall commence construction of a sawmill-planer mill complex in the vicinity of

with a capacity to produce approximately 100 million board feet of lumber annually and include machinery for the recovery of wood chips of a type and quality suitable for the manufacture of wood pulp of high quality.

- (3) Not later than July 1, 1983, the Company shall commence construction of a paper mill plus associated thermo-mechanical pulping facilities in the vicinity of with a capacity to produce a minimum of 175,000 tonnes of paper or newsprint.
 - (4) For the purpose of subparagraphs (1), (2) and (3) the commencement of construction means the date on which construction physically begins on the site under the terms of a firm construction contract or the first of a series of firm construction contracts with a reputable contractor or contractors, providing for continuing construction leading to the completion of the facility in question:
 - (a) within seventeen calendar months of commencement of construction in the case of subparagraphs (1) and (2), and
 - (b) by December 31, 1985 in the case of subparagraph (3).
39. (1) The Company shall satisfy the Minister of Economic Development prior to August 1, 1980 and throughout the term of this Agreement with respect to the use, wherever practicable of Alberta engineering and other professional services, and Alberta tradesmen and other construction personnel, equipment, materials and supplies from Alberta.
- (2) With respect to activities under this Agreement, and whenever practicable, the Company shall co-operate with the Minister of Advanced Education and Manpower as follows:
- (a) employee selection by the Company will favour Alberta residents in general and local residents in particular assuming qualifications equal to those of non-resident applicants;
 - (b) the Company will play a significant role in the development of job skill training programs for local residents, provided such programs are adequately supported by the local residents.
40. (1) If the Company fails to commence construction or to complete construction
- within the times specified in paragraph 38, the Minister may give notice to the Company stating the default complained of and requiring the Company to remedy such default within six months of the date of such notice, and if the Company fails to remedy the default within the said period of six months, the Minister may cancel this Agreement and declare the rights of the Company under this Agreement to be at an end and thereupon the deposit referred to in subparagraph (1) of paragraph 43 shall be forfeited and become the property of the Crown, unless the Lieutenant Governor in Council extends the period as provided in subparagraph (2) below.
- (2) The Lieutenant Governor in Council may from time to time extend the period during which the Company is to remedy the default complained of in a notice given under subparagraph (1).
41. The Company shall submit to the Minister when required any information or documents the Minister may reasonably request relating to the progress of the construction of the facilities required to be constructed by the Company and other matters relating to this Agreement for the purpose of verifying the Company's continued compliance with the terms of this Agreement.
42. (1) The Company must operate the lumber production facilities at both _____ and _____ as described in paragraph 38(1) and (2) at not less than 50% of the respective capacity figures specified in paragraph 38 for any calendar year following the year of start up.
- (2) The annual production, expressed as a percentage of mill capacity, of the sawmill shall not be less than the annual production, expressed as a percentage of mill capacity, of the sawmill, unless otherwise agreed to in writing by the Minister.
- (3) The company will notify the Minister, in writing, of any intended major reduction in production levels of any of its mill facilities described in paragraph 38, and such notification will be submitted to the Minister at least six weeks prior to the intended reduction taking effect.
- ### DEPOSIT
43. (1) The Company shall deposit with the Minister the sum of \$2,000,000 on the date this Agreement is executed.
- (2) The deposit referred to in subparagraph

- (1) may consist in whole or in part of cash, a certified cheque and letter of commitment submitted in accordance with all of the requirements of the Minister, or bearer bonds of the Government of Canada or of the Province of Alberta having a market value at time of placement equivalent to the sum of such deposit.
 - (3) The interest coupons attached to any bonds deposited pursuant to subparagraph (2) shall, as they fall due for payment, be detached and returned by the Minister to the Company.
 - (4) Upon the completion of construction and commencement of production of the paper mill and pulping facilities the Company may make application for a partial refund of deposit whereupon the Minister shall retain \$750,000 as a deposit to guarantee against default by the Company of any of the covenants, terms, stipulations, conditions, agreements and provisions of this Agreement and will return the balance to the Company provided all the requirements of paragraph 38 have been met.
 - (5) The Company may with the consent of the Minister, at any time during the existence of this Agreement, substitute one or more forms of deposit as described in subparagraph (2) herein, for any one or more forms of deposit held by the Minister pursuant to this Agreement.
 - (6) When this Agreement expires and is not renewed, and there is not then an unremedied default under this Agreement of which the Company has been notified, the Minister will return to the Company all deposits then held by the Minister under this Agreement.
44. (1) If the Company at any time after the completion of construction makes default under any of the covenants, terms, conditions, provisions, agreements and stipulations in this Agreement, the Minister may give notice to the Company setting out the default complained of and requiring the Company to remedy the default within six months of the giving of notice, and if the Company fails to remedy the default complained of within the said period of six months, the Minister may declare that the whole or part of the deposit is forfeited and thereupon the amount becomes the property of the Crown, unless the Lieutenant Governor in Council extends the period as provided in subparagraph (2) below.
- (2) The Lieutenant Governor in Council may from time to time extend the period during which the Company is required to remedy any default complained of in a notice given pursuant to subparagraph (1).
 - (3) Where the whole or part of the deposit has been forfeited pursuant to subparagraph (1), the Minister may suspend timber harvesting operations and shall not approve the next operating plan unless the default complained of has been remedied to the satisfaction of the Minister and the deposit re-established subject to paragraph 44 and 45 herein.
45. Notwithstanding the right of the Minister as provided for under paragraph 44(1) to declare a forfeiture of the deposit provided pursuant to paragraph 43 or as redeposited pursuant to the terms of paragraphs 43 and 44, the Minister shall have the right to have the Company perform all the covenants, terms, conditions, stipulations, provisions and agreements and obligations upon it as contained in this entire Agreement or to sue the Company for damages for any breach or breaches thereof and the Minister shall also have the right to cancel this Agreement and the rights of the Minister to have the Company perform the Agreement and to sue for damages as aforesaid as well as the right of cancellation shall be construed as additional remedies to forfeiture and not an alternative to it.
46. When any default or delay by the Company in the performance or observance of any of the terms, conditions, provisions, agreements, covenants and stipulations of this Agreement is occasioned in whole or in part through interruption which is not the result of any willful or negligent act or omission by the Company or through industrial disputes, and not avoidable by reasonable effort or foresight, the Company shall not be deemed in default under this Agreement.

GENERAL PROVISIONS

47. (1) The Minister may, by giving to the Company ninety days notice in writing, cancel this Agreement when:
 - (a) any goods or chattels of the Company, having a value in excess of \$500,000.00, which are liable to distress, are lawfully seized or taken in execution by a creditor of the Company, and the Company has

- failed to take any legal action to contest the same within ninety days after such seizure or taking, or
- (b) the Company makes any general assignment for the benefit of its creditors or an assignment in bankruptcy or takes the benefit of any Act in force for bankrupt or insolvent debtors, or
 - (c) The Company fails from time to time to observe or perform any of the covenants, stipulations, terms, conditions, provisions and agreements required to be observed or performed by the Company under this Agreement, and having been given notice of such failure under paragraph 44 of this Agreement, fails to remedy such failure within the time allowed by the said paragraph for so doing, or any extension thereof given by the Lieutenant Governor in Council.
- (2) Clause (b) of subparagraph (1) does not apply if a trustee for the holders of bonds, debentures, or other securities of the Company exercises any rights or remedies contained in any deed or trust or mortgage or other agreement under which such bonds, debentures or other securities are issued or secured, including but without restricting the generality of the foregoing, the taking of possession by the trustee of the Company's properties and assets and the operation or disposition thereof for the benefit of the holders of the Company's bonds, debentures or other securities.
- 48. The Minister does not guarantee any quality or quantity of timber on the forest
 - 49. No implied contract of any kind by or on behalf of the Minister shall arise or be construed from anything contained in this Agreement and the only rights, power and privileges granted to the Company are those contained in this Agreement.
 - 50. The Minister and the Company agree that the lines on the map shown in Appendix "A" hereunto annexed are intended, where those lines outline areas that are yet unsurveyed, to be the survey lines of the townships, sections, or half sections, as the case may be, that would exist if such areas were surveyed under the system of township surveys prescribed by The Alberta Surveys Act and any amendments or substitutions thereto.
 - 51. The Company shall comply with and observe all the provisions and requirements of:
 - (a) The Forest Act, 1971, and as amended from time to time, and
 - (b) any Acts of the Legislature of the Province of Alberta in force, or enacted hereafter from time to time, and as amended from time to time, and
 - (c) any Regulations inclusive of any amendments or substitutions in force from time to time under any of the Acts referred to in clauses (a) and (b) that apply to the Company or to this Agreement either specially or generally by express wording or by implication.
 - 52. The Company agrees to exercise reasonable efforts to maintain employment in the form of 360 jobs in the vicinity of
 - 53. The Company shall during the term of this Agreement maintain an office in the Province of Alberta or obtain and maintain a registration under The Companies Act of Alberta, its regulations or as each may be amended from time to time.
 - 54. (1) Where any dispute arises between the parties to this Agreement concerning the application of interpretation of this Agreement the dispute may be referred to arbitration pursuant to The Arbitration Act of Alberta but only upon the mutual agreement of both parties.
 - (2) In the case of a dispute arising between the parties in relation to paragraphs 31, 46, and 58 or any other paragraph contained in this Agreement where both parties do not agree to refer a dispute concerning this Agreement to arbitration as provided in subparagraph (1) the dispute shall be resolved by means of civil action before the Courts of the Province of Alberta.
 - 55. The Company shall not assign this Agreement or any of the rights granted to it by this Agreement without the consent of the Minister in writing and such consent may in his sole discretion be withheld. Where the Minister refuses consent to an assignment, he shall advise the Company in writing of his reasons for so refusing. The employment of contractors by the Company in the normal conduct of its operations, or a charge given by way of security before crystallization, shall not be deemed to be an assignment.
 - 56. Any waiver by the Minister of the strict performance by the Company of its covenants or of any term, condition, stipulation, agreement or provision under this Agreement is not binding upon the Minister unless such waiver is expressed in writing

- under the authority of the Minister and any such waiver or any extension of time granted by the Lieutenant Governor in Council hereunder shall not abrogate such or any covenant, term, condition, stipulation, agreement or provision herein or constitute a waiver or extension of time as to any subsequent breach of the same or any other covenant, term, condition, stipulation, agreement or provision herein.
57. The Company covenants and agrees to observe, perform and keep all covenants, terms, conditions, stipulations, agreements and provisions herein on its part to be observed, performed and kept and time shall be and remain of the essence thereof and notwithstanding any binding waiver given by the Minister as referred to in paragraph 56 or any extensions of time given by the Lieutenant Governor in Council under this Agreement that thereby may affect the time for performing any particular act, covenant, term, condition, stipulation, agreement, or provision of this Agreement herein, time shall remain of the essence pertaining to all subsequent performance by the Company of any and all acts, covenants, terms, conditions, stipulations, agreements and provisions herein contained and to this entire Agreement.
58. The Company assumes liability for and shall pay all claims of the Minister for all damages to any real or personal property other than timber of the Crown in right of Alberta caused by the Company, its servants, agents, workmen and contractors in the course of the exercise or purported exercise of its rights, powers and privileges under this Agreement, whether or not the damage so caused is due to the negligence of the Company, its servants, agents, workmen and contractors, as the case may be.
59. The Company shall keep the Minister indemnified against all claims and demands that may be made against the Minister by reason of anything done by the Company, its servants, workmen, agents, and contractors on the forest management area in the exercise or purported exercise of its rights, powers and privileges under this Agreement.
60. The Company shall comply with the requirements of The Public Health Act, The Clean Air Act and The Clean Water Act of Alberta and as amended from time to time and all other applicable provincial and federal legislation now or hereafter enacted and the regulations inclusive of any amendments or substitutions thereunder relating to the control of air and water pollution and shall employ the most modern techniques, methods and devices at its expense that are reasonably economic.
61. Any notice required to be given under this Agreement shall be deemed to be well and sufficiently given if delivered to the address set out below or if mailed at any government post office in the City of Edmonton, Alberta or in the City of
by prepaid registered mail addressed as follows:
- (a) to the Company:
The Secretary
THE COMPANY
 - (b) to the Minister:
Minister of Forestry, Lands
and Wildlife
Legislature Building
Edmonton, Alberta
T5K 2B7
- or to such other address either party may from time to time inform the other party in writing, and any such notice shall be deemed to have been received on the fourth business day after the mailing thereof, or if delivered, when delivered, provided that if mailed should there be between the time of mailing and the actual receipt of the notice a mail strike, slow down or other labour dispute which might affect the delivery of such notice then such notice shall only be effective if and when actually delivered.
62. This Agreement is made subject to its approval by the Lieutenant Governor in Council.
63. This Agreement inures to the benefit of and is binding upon Her Majesty the Queen in Right of the Province of Alberta and Her assigns, and the Company and its successors and assigns if approved by the Minister in Accordance with the provisions of this Agreement.
64. This Agreement shall be construed as having been made in the Province of Alberta and the laws of the Province of Alberta shall be applied in the event of any action or arbitration mutually agreed to, respecting any dispute arising from this Agreement, its formulation, interpretation, and each and every other aspect pertaining to or resulting from its entire contents.
- IN WITNESS WHEREOF the party of the first first part executes this Agreement pursuant to the hand of the Minister subscribed hereunder and the party of the second part executes this Agreement by subscribing hereunder the

signatures of its duly authorized corporate
officers and by attesting hereto its lawful
corporate seal this day of

Her Majesty the Queen in Right of Alberta
as represented by the

Minister of Forestry, Lands and Wildlife

THE COMPANY

Per:

President and Chief Executive Officer

Per:

Vice-President and Comptroller.

Witness

APPENDIX "B"

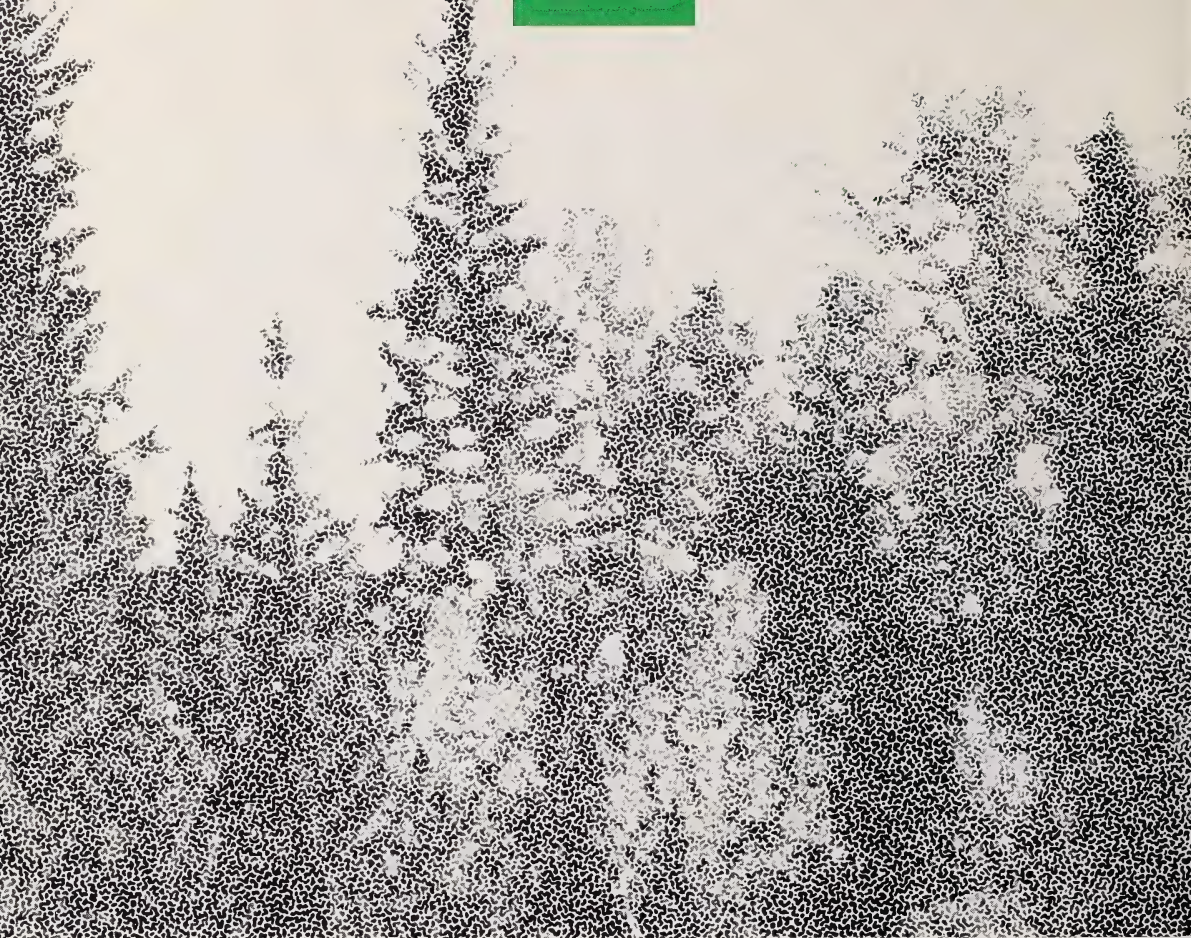
LIST OF THE HOLDERS OF CONIFEROUS TIMBER QUOTA CERTIFICATES ISSUED WITHIN THE FOREST MANAGEMENT AREA

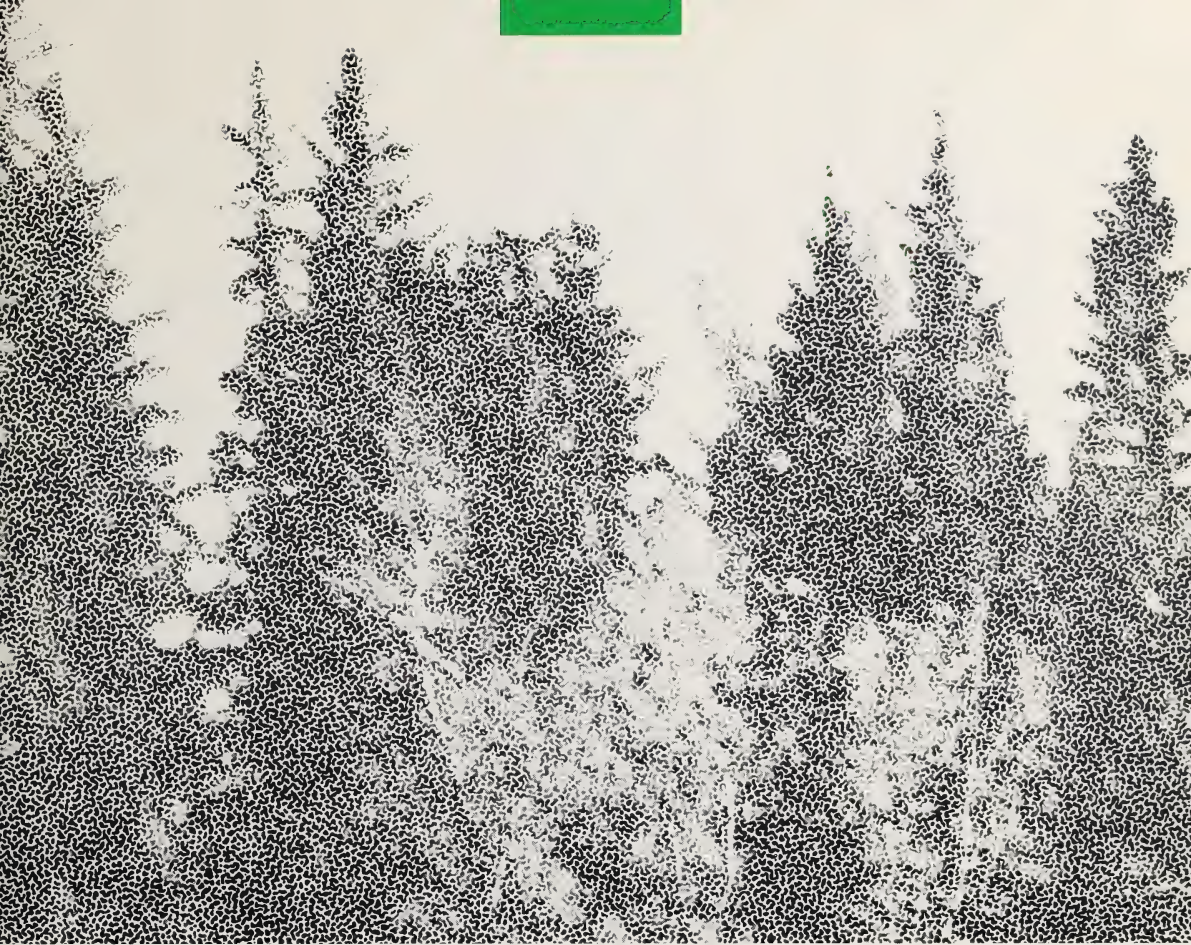
1. COMPANY 1
2. COMPANY 2
3. COMPANY 3
4. COMPANY 4
5. COMPANY 5

IN THE EVENT THAT AN ADDITIONAL
MANAGEMENT UNIT IS ADDED TO THE
FOREST MANAGEMENT AREA
THE FOLLOWING CONIFEROUS TIMBER
QUOTA CERTIFICATES ARE ISSUED WITHIN
MANAGEMENT UNIT

1. COMPANY 6
2. COMPANY 7
3. COMPANY 8
4. COMPANY 9







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Alberta's forest covers two-thirds of the province and contains 2.7 billion cubic metres of wood. The forestry sector contributes approximately \$1.0 billion annually to Alberta's gross domestic product. Forestry provides the economy with over 10,000 direct jobs.

Currently, less than half of Alberta's annual allowable cut is being harvested. This tremendous uncommitted reserve of coniferous and deciduous timber, made accessible with a superior transportation infrastructure, offers unlimited opportunities to entrepreneurs and businesses.



High quality, accessible forest resources.

Like all Canadian provinces, Alberta has jurisdiction over its natural resources, and is responsible for managing and developing these resources. In addition to abundant forest resources, Alberta's natural gas, coal, petroleum products, and reasonable electrical power rates ease removal and processing of timber.

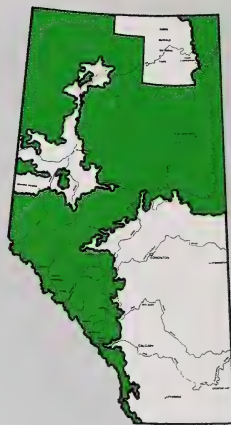
An experienced labour force, supported by a comprehensive educational system, keep labour costs low and productivity high.

The Government of Alberta encourages free enterprise and, committed to an environment conducive to investment, provides corporate tax reductions to eligible businesses.

Government support for the forestry sector encourages industrial growth and development, international trade promotion, and the discovery and development of new markets for Alberta lumber and composite board products.

Emphasis on the industrial development of Alberta forests requires effective forest management. Forest Renewal Programs ensure our renewable natural resource will prosper far into the future.

High quality forest resources, a superior transportation network, a broad base of natural resources, highly trained human resources, and a supportive economic and political environment. All these factors make Alberta an excellent environment for investors...a forested land with vast opportunities for growth and development.



● GREEN AREA

Alberta's thriving forest industry works in one of North America's largest uncommitted reserves of coniferous and deciduous timber.

Most forested land in Alberta is managed by the provincial government. In 1948, Alberta designated this forest land as "The Green Area". This action was the first step in developing a permanent forest land base. (See Appendix A for details)



Highly trained human resources.

ALBERTA FOREST DEVELOPMENT





The Alberta lumber industry annually produces 1.3 billion fbm of lumber. Most of this production comes from several dozen major sawmills.

Alberta's total standing timber volume is 65% coniferous and 35% deciduous species.

The annual allowable cut of 25.7 million cubic meters or 6 billion fbm (board feet) is 56% coniferous and 44% deciduous species. In 1986 only 6.9 million cubic meters (1.6 billion fbm) were processed, primarily for lumber and pulp. As of July 1st, 1987, 5.5 million cubic meters (1.3 billion fbm) coniferous, and 10.2 million cubic meters (2.4 billion fbm) deciduous are available annually for future development.

WOOD COST

The low cost of delivered wood is a prime reason for investing in Alberta forests. Delivered cost of roundwood to the mill is between \$23 - \$27 per cubic meter (\$99 - \$116 per thousand board feet). Cost depends on the piece size and related haul distance. Companies are responsible for

some road costs and reforestation costs.

DELIVERED WOOD COST & BREAKDOWN FOR PULP:

Felling/Skidding/Decking	46.1%
Loading	4.5%
Hauling	17.6%
Road Construction	4.6%
Other Administration	27.2%



ALBERTA EXPORTS OF WOOD AND WOOD PRODUCTS

Alberta supplies a variety of forest resource products to local, national and international markets. In 1986, out of a total production value of approximately \$1.0 billion, Alberta's foreign exports exceeded \$400 million. The

United States was the major market for these products. Exports of softwood lumber and wood pulp also reached the United Kingdom, Belgium, Luxembourg, West Germany, Japan, South Korea, and Taiwan.

T OPPORTUNITIES



The Alberta government places a high priority on the development of the province's transportation infrastructure. The forest industry is served by a network of roads and highways, trucking companies, intermodal services, railways, and air transportation systems. Each method enables products to reach markets efficiently.

ROADS AND HIGHWAYS

Over 15,000 kilometers (9,325 miles) of paved highways and roads connect major centres in the province. First class arterial roads and highways link up with main highways in adjacent provinces and American states.

TRUCKING

Trucking is used extensively for short hauls of forest products throughout Western Canada. Regulation of the industry is under provincial jurisdiction. New proposals to decrease barriers to entry and standardize trucking regulations facilitate shipping.

INTERMODAL SERVICES

Intermodal containers provide protective transportation of forest products, reduced cargo handling, simplified customs



procedures, reductions in packing, with potential reductions in insurance and documentation costs.

Alberta Intermodal Services is a company owned and registered by the Alberta government. It provides lower inland transportation costs and stimulates trade by improving service to and from the North Pacific Coast.

RAILWAYS

Two major railway companies serve Alberta: Canadian National and Canadian Pacific. Approximately 11,000 kilometers (6,835 miles) of line provide connections east and west to ocean ports as well as

to the Canadian North and the United States.

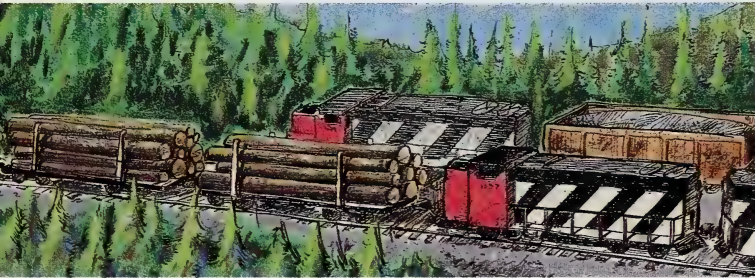
Prior to deregulation, rail rates paid by shippers were based on origin and destination zones. Deregulation is intended to sharpen competition among railway companies and improve rates and service.

AIR

Both passenger and air cargo activities have expanded rapidly in Alberta in recent years. These companies provide services ranging from air charters and aerial surveys to fighting forest fires. Provincially-based firms make use of 89 licensed airports.

Major airlines such as Canadian Airlines International and Air Canada provide scheduled regional, national and international passenger and air freight services.

A number of U.S. carriers provide Calgary and Edmonton with international flights. In addition, Wardair serves Alberta with national and international flights on a charter basis.



TRANSPORTATION





Alberta possesses abundant energy resources. Vast deposits of coal, oil, and natural gas help power the harvesting of the forest. The size, proximity, and development of these natural resources keep the costs reasonable.

Alberta holds two-thirds of Canada's useable coal reserves. Much of the sub-bituminous coal used for power generation is located close to major electric energy load centres.

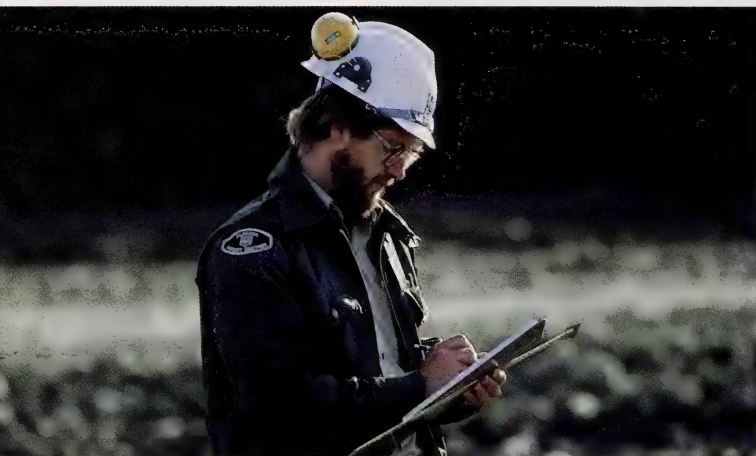
Over the last several decades, the petroleum industry has designed highly sophisticated technology for processing the large percentage of natural gas which is wet and/or sour, containing sulphur and liquid co-products such as propane and butanes. Excluding refinery production, Alberta produces approximately 95% of Canada's propane and butanes. Deregulation within the natural gas industry has resulted in Alberta having the lowest natural gas costs in Canada. (See Appendix C, Chart #1)

Extensive transmission lines connect power plants to major consumption areas on the power grid in Alberta. The grid reaches all but the most remote areas of the province, which are served by isolated plants. The price of electricity in Alberta is among the lowest in Canada due to ample electric generation primarily from the abundance of coal and natural gas. (See Appendix C, Chart #2)

NATURAL RESOURCES

A stable and experienced work force saves time and money in the forest industry. In 1986, Alberta was one of the provinces with the lowest

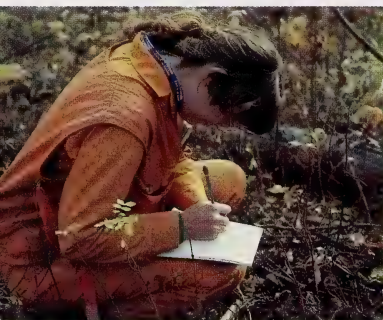
requirements be met before strikes or lockouts can be initiated during the negotiation or renegotiation of collective agreements. Legislation also



Alberta's experienced work force is one of the most highly trained in the world.

percent working time lost due to strikes and lockouts. (See Appendix C, Chart #3)

A politically supportive environment for business and resource development demands certain procedural



Alberta's highly trained labour force is the fourth largest in Canada. (See Appendix C, Chart #4) The forestry sector provides the economy with over 10,000 direct jobs.

exists to protect workers' interests with regard to minimum wage, industrial standards, collective bargaining



and arbitration. This approach keeps the number of person days lost in Alberta due to strike action well below the national average.

There are many job creation and training programs available to eligible businesses. Skill upgrading programs ensure new and experienced workers are trained in safety standards and on up-to-date equipment.

Alberta's extensive timber reserves and lengthy history of resource development guarantees industry a pool of highly trained, experienced forest workers.



Training and skill upgrading programs are offered at Alberta's vocational centres, colleges and universities.

HUMAN RESOURCES



The Government of Alberta's economic strategy actively supports business development. It builds upon existing strengths and identifies and promotes investment opportunities. The strategy works to overcome obstacles to business start-up, expansion, and new product development.

Alberta boasts one of the country's lowest corporate tax rates. The absence of any retail sales tax means savings for corporations and employees. (See Appendix C, Chart #5)

THE ALBERTA GOVERNMENT:

- Promotes international trade and encourages lowering and removal of trade barriers;
- Supports upgrading resources to optimum levels prior to their sale;
- Develops new technologies through increased research and development programs;
- Emphasizes continuing growth of the basic

transportation network; and

- Remains committed to a renewable forestry base, effective forest management, and most efficient utilization of forest reserves;

In June 1986, the Alberta Department of Forestry, Lands and Wildlife created the Forest Industry Development Division (FIDD). FIDD acts as a catalyst in attracting investment and dealing with forest development proposals from business. This proactive approach to industry initiatives involves providing information, advice, research data, business analyses, and help in exploring financial assistance packages. The "one stop shopping" service provided by FIDD can be an efficient time saver for a company facing an array of government departments, policies, programs and regulatory requirements. (See Appendix A for details)



A GROWING INDUSTRY

Mid-1950's Forest industry diversifies focus on lumber to include pulp, plywood and wood preservation products. New markets continue to open at home and abroad.

1956-57 First major forestry investment: construction of bleached sulphate kraft pulpmill at Hinton.

1973 Second bleached kraft pulpmill constructed by Procter & Gamble at Grande Prairie.

1983 Alberta produces 1 billion fbm of lumber for the first time.

1985 Canada's first oriented strandboard plant built at Edson, Alberta.

1986 Canada's first medium density fibreboard plant built at Blue Ridge, Alberta.

1987 Alberta sawmills produce over 1.3 billion fbm of lumber. Three major plywood mills, three oriented strandboard plants, and two roofing felt plants in operation. Eighteen wood treatment plants produce 200,000 cubic meters of treated wood products.

1988 Opening of bleached chemi-thermomechanical pulpmill at Whitecourt.

1989 Capacity doubles at Hinton's bleached kraft pulpmill.

ECONOMIC ENVIRONMENT



Today's forest industry is a major contributor to Alberta's economy. Undeveloped forest resources have the capability of expanding the industry to several times its current level. No other Canadian province can match that potential. The large volume of uncommitted timber offers numerous opportunities for manufacturing and investment.



Aspen (poplar) is Alberta's most under-utilized forest resource.

The development of the province's vast stands of aspen (poplar) presents investment opportunities such as:

- sawmills producing hardwood furniture grade lumber;
- mills producing laminated veneer lumber, medium density fibreboard, hardboard, and oriented strandboard;
- preserved and fire retardant wood products;
- household products including furniture and kitchen cabinets;
- factory-built mobile modular, prefabricated, and paneled houses;
- floors, doors, windows and paneling;
- pallets and other material handling systems.

Other potential uses for unutilized timber resources include the manufacture of printing and writing paper, mechanical pulp, chemical (kraft) pulp, coated paper, uncoated groundwood papers and uncoated wood free papers.



Alberta's forest-based industries account for more than 10% of the value of manufactured goods in the province.

INVESTMENT ENVIRONMENT





ALBERTA IS OPEN FOR BUSINESS

The forest products industry is a vital part of the economy. Reserves of uncommitted timber provide unparalleled development and investment potential.

In addition to vast areas of uncommitted high quality timber, Alberta has a highly developed transportation network, abundant energy resources, an experienced work force, and a politically supportive investment environment.

Alberta also boasts one of the lowest number of strike days, competitive wages, low delivered wood costs, lowest energy costs, and lowest fuel costs in Canada.

Transportation systems move goods quickly and efficiently with container access, transfer yards and a trend towards deregulation.

Alberta is the only province in Canada with no retail sales tax and has one of the lowest corporate tax rates.

The Government of Alberta offers services and assistance programs and supports a free enterprise environment committed to encouraging foreign investment.

Take advantage of Alberta's forest development opportunities.

IT'S A GROWING INVESTMENT.

SUMMARY

DEPARTMENT OF FORESTRY, LANDS AND WILDLIFE

The Department manages Alberta's most important renewable resources. Departmental responsibilities include land use planning, surveying, government mapping and aerial photography, monitoring "controlled" land purchases, and administration of legislation licensing land agents.



The Department's "integrated use" concept encourages the growth of the forest products industry while ensuring Alberta's forested public lands continue to provide fish and wildlife habitat, vital watershed, grazing lands, non-renewable resource development sites and a variety of outdoor recreation and tourism opportunities.



The province's integrated resource planning process is designed to sort out land use needs and potential conflicts among competing interests for Alberta's public lands. The process assists in planning development opportunities such as harvestable timber, resort projects and agricultural expansion while protecting sensitive environmental areas.

Departmental priorities include a greater use of plentiful hardwood resources and expansion of the pulp and paper industry by encouraging new product and research initiatives. Assistance is provided to modernize existing sawmill and panelboard plants, develop new technologies, improve transportation, and strengthen marketing strategies.

FOREST INDUSTRY DEVELOPMENT DIVISION

The Forest Industry Development Division's mandate promotes the modernization, expansion and diversification of the forest products industry by providing advice and information on financial assistance to new and existing forest companies and private investors.

The Division acts as an advocate for industry initiatives with other government departments and agencies. A team of professionals, aware of both resource management concerns and the benefits of a healthy forest products industry, works to remove impediments to investment in forest development.

ALBERTA'S FOREST INDUSTRY OBJECTIVES

- To maximize the utilization of the Annual Allowable Cut (AAC).
- To implement forest management practices which maintain a high standard of environmental protection.
- To increase levels of employment, revenue, and primary and secondary manufacturing based on the wood fibre available.

Within the division, the Forest Products Research and Development Branch supports maximum utilization (both value and volume) of the timber resource, increased competitiveness of existing industry, and new development. The Branch administers sub-program B.4 of the Canada/Alberta Forest Resources Development Agreement which funds many of the R & D programs. The industry and government are partners in the selection and funding of these programs.

ALBERTA FOREST SERVICE DIVISION

The Alberta Forest Service manages Alberta's forest lands to preserve a perpetual supply of benefits and products while maintaining a high quality forest environment.

Based on a "sustained yield" principle, the Forest Service oversees a well-monitored system for ensuring the forest is returned to its original condition - or better - following the timber harvest. In exchange for long-term tenure in Alberta's forests, holders of

APPENDIX A: ALBERTA FOREST MANAGEMENT



timber dispositions submit detailed operating plans and meet Alberta Forest Service requirements for regenerating all cut-over areas within certain time limits.

TYPES OF TENURE

Timber harvesting rights can be acquired from the provincial government in two ways: the Forest Management Agreement (FMA) and the Timber Quota. Forest Management Agreements are awarded for the development of large, integrated operations. Timber Quotas are sold competitively and deal with smaller, single use operations.

FOREST MANAGEMENT AGREEMENT

The Forest Management Agreement is a 20 year renewable agreement between the Alberta government and a company. This agreement grants the company the rights and obligations to manage, grow and harvest timber on a sustained yield basis in the area designated under the agreement.

FMA AWARD PROCESS

The process for obtaining a Forest Management Agreement begins with an inquiry or submission of a formal proposal. The exact terms and conditions of the agreement are negotiated prior to the award. All proposals are reviewed by the minister and provincial cabinet before the final award. The award of a Forest Management Agreement is based on the feasibility of the project and other criteria such as benefit to the



community and to the provincial economy.

TIMBER QUOTA SYSTEM

The Timber Quota is a commitment of timber volume using a 20 year renewable certificate with plan approval from the Alberta Forest Service. It allocates the rights to harvest a percentage share of the annual allowable cut within a management unit. Licenses average five years in length and require the operator to develop an annual operating plan for timber removal.

COMPANY RESPONSIBILITIES

The company develops proposed timber processing

facilities according to the schedule established in the Forest Management Agreement or Timber Quota. The company is responsible for planning, logging, road development, and regeneration. These actions are described in a Forest Management Plan prepared by the company and are subject to the standards of the Alberta government.

The main goal of such a plan is securing the future of the forest resource and the forest industry through silviculture and reforestation. A comprehensive reforestation policy ensures that forest productivity remains of superior quality during future rotations.

The Alberta Forest Service and the forest industry share responsibility for a tree improvement program. This program produces superior genetic stock from lodgepole pine and white spruce with seed orchards established for propagation and reforestation.



SELECTED PROVINCIAL PROGRAMS AND SERVICES

Canada/Alberta Forest Resources Development Agreement

This five year agreement began in 1984 and commits to a cost shared \$23 million program. The objectives are:

- Ensure the security of timber supplies and industry viability over the long term.
- Promote the efficient utilization of forest resources - especially hardwood resources.
- Increase economic diversification and employment opportunities in the forest sector.

Canada/Alberta Northern Development Agreement

Under this agreement, assistance is available to eligible parties in the renewable and non-renewable resource sectors and service sectors. The Agreement encourages development in Northern Alberta.

Alberta Research Council

Alberta spends more each year per capita on research and development than any other Canadian Province. Much of the research focuses on structural panel products since this type of product represents the major utilization of aspen (poplar) in Alberta. Emphasis is also placed on added value utilization of softwoods and hardwoods.

Alberta's Forest Industry Research Group exists under the auspices of the Alberta Research Council to facilitate medium and long term

research. Studies have investigated:

- laminated beams from spruce and pine
- commercial kiln drying of aspen
- added value products from lodgepole pine
- increased pulp quality from steam explosion process
- an on-line electronic quality control system for composite panel products

DEPARTMENT OF ECONOMIC DEVELOPMENT & TRADE

This provincial government department is the primary coordinator of Alberta's economic strategy. Their mandate involves strengthening existing industries, diversifying the economy, and encouraging balanced growth throughout the province.

Transportation Services Division

This Division is responsible for co-ordinating the review and analysis of transportation issues, policies, and programs in Alberta. It facilitates the efficient movement of goods into and out of the province. The Division assists potential investors with information pertaining to rates, locations, or other issues regarding the movement of goods.

Small Business Division

The Division's objectives are to promote new business formation and to increase the survival rate of existing businesses.

For current telephone numbers of Government of Alberta offices, contact: (403) 427-2711

SELECTED FEDERAL PROGRAMS AND SERVICES

Federal Business Development Bank

This service extends financial assistance to new or existing businesses in Canada and assists management development through seminars, conferences and training courses.

Industrial and Regional Development Program (IRDP)

This program provides financial support to private sector initiatives. Priority areas of interest are innovation, business establishment, modernization, expansion, and marketing.

Program for Export Market Development (PEMD)

This program offers incentives for Canadian firms to enter or expand foreign markets by providing contributions of up to 50% of the costs incurred to investigate new markets. The contributions are repayable if sales are achieved.

Western Diversification Office

This \$1.2 billion five year program was established for the western provinces in 1987. Funds will be used to support the creation of western enterprises and to assist in the modernization and expansion of existing businesses.

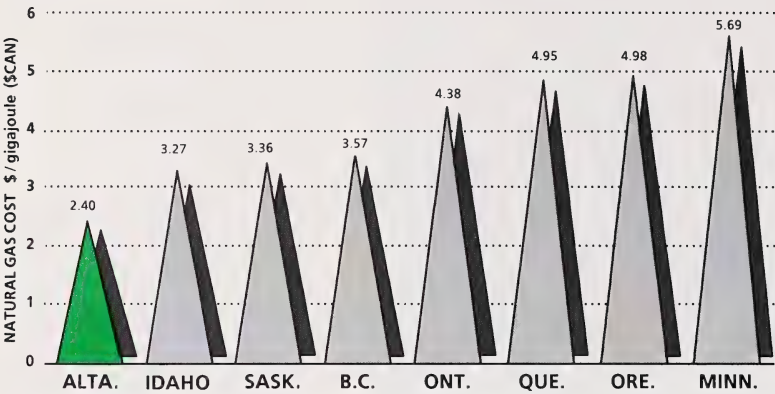
**For current telephone numbers of Government of Canada offices, contact: (403) 420-2021 (Edmonton)
Toll free 1-800-232-9481**

APPENDIX B: RELATED GOVERNMENT PROGRAMS AND SERVICES



CHART #1

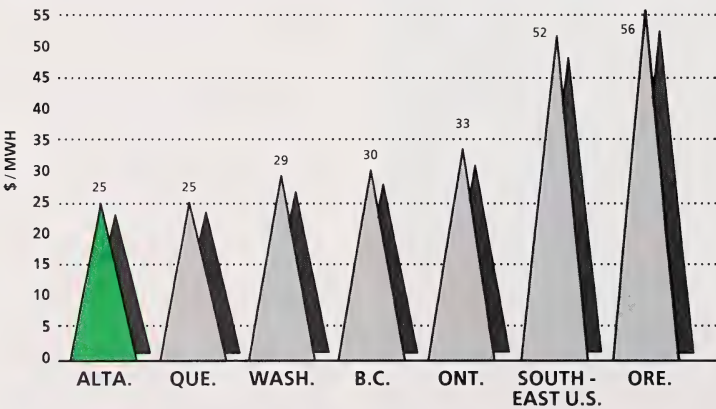
COMPARISON OF NATURAL GAS COSTS*
FOR MEDIUM SIZED INDUSTRIAL USERS**



SOURCE: Provinces - Energy Pricing news, Sullivan Communications, Ontario,
April, 1987. Stats - Utility Company Quotes
* If province has more than one utility company, costs are averaged
** Medium sized user based on approximately 4,000 gj / month

CHART #2

COMPARATIVE COST OF ELECTRICITY (INDUSTRIAL RATES)



SOURCE: Sandwell Swan Wooster (1987)
Industrial power rates for a typical thermomechanical newsprint mill
which traditionally requires a large amount of electric power.

APPENDIX C: REFERENCE CHARTS



CHART #3

COMPARATIVE LABOUR DATA

	Alta.	B.C.	Sask.	Ont.	Que.
Percent of estimated* working time lost due to strikes & lockouts	0.05	0.40	0.02	0.13	0.31
Average forestry** wage/hour	\$14.87	\$18.33	\$13.19	\$16.48	\$14.40
Minimum wage	\$3.80	\$4.00	\$4.50	\$4.35	\$4.35

SOURCE: *Statistics Canada, 1986
**Statistics Canada, Employment Earnings and Hours Second Quarter, 1987

CHART #4

COMPARATIVE DEMOGRAPHIC DATA

	Alta.	B.C.	Ont.	Que.	Sask.	Idaho	Ore.	Minn.
Population (in 000's)	2,363	2,893	9,110	6,599	1,018	1,005	2,087	4,193
Average Annual Salary	\$16,839	\$16,214	\$17,410	\$14,959	\$14,219	\$14,826*	\$16,829*	\$18,782

Source: Alberta Statistical Review, Second Quarter, 1987
Statistical Abstract of the United States, 1987.
* U.S Dollars Converted to Canadian Dollars
Exchange Rate: \$1 Canadian = \$.75 U.S.

CHART #5

COMPARATIVE TAX DATA

Province/State	Small Business Rate*	Large Corporations	Large Manufacturing and Processing Corporations	Basic Retail Sales Tax
Alberta	0/5	15	9	0
British Columbia	11	15	15	6
Saskatchewan	0/10	17	17	5
Quebec	0/3.22	13.9	5.9	9
Ontario	0/10	15.5	14.5	7
Idaho	7.7	7.7	7.7	5
Oregon	7.5	7.5	7.5	0
Minnesota	6**	6**	6**	6
	12***	12***	12***	

* The 0% rate applies to new start-up small businesses, except in Alberta where it applies to manufacturing and processing income.
Saskatchewan's 0% rate applies to both.
** First \$24,000
*** Balance after initial \$24,000
NB Tax data as of July, 1987

**The Government of Alberta
welcomes your ideas and
inquires**

Hon. E.L. Fjordbotten
Minister of Forestry, Lands
and Wildlife
Room 403, Legislature Building
Edmonton, Alberta
Canada T5K 2B6
(403) 427-3674

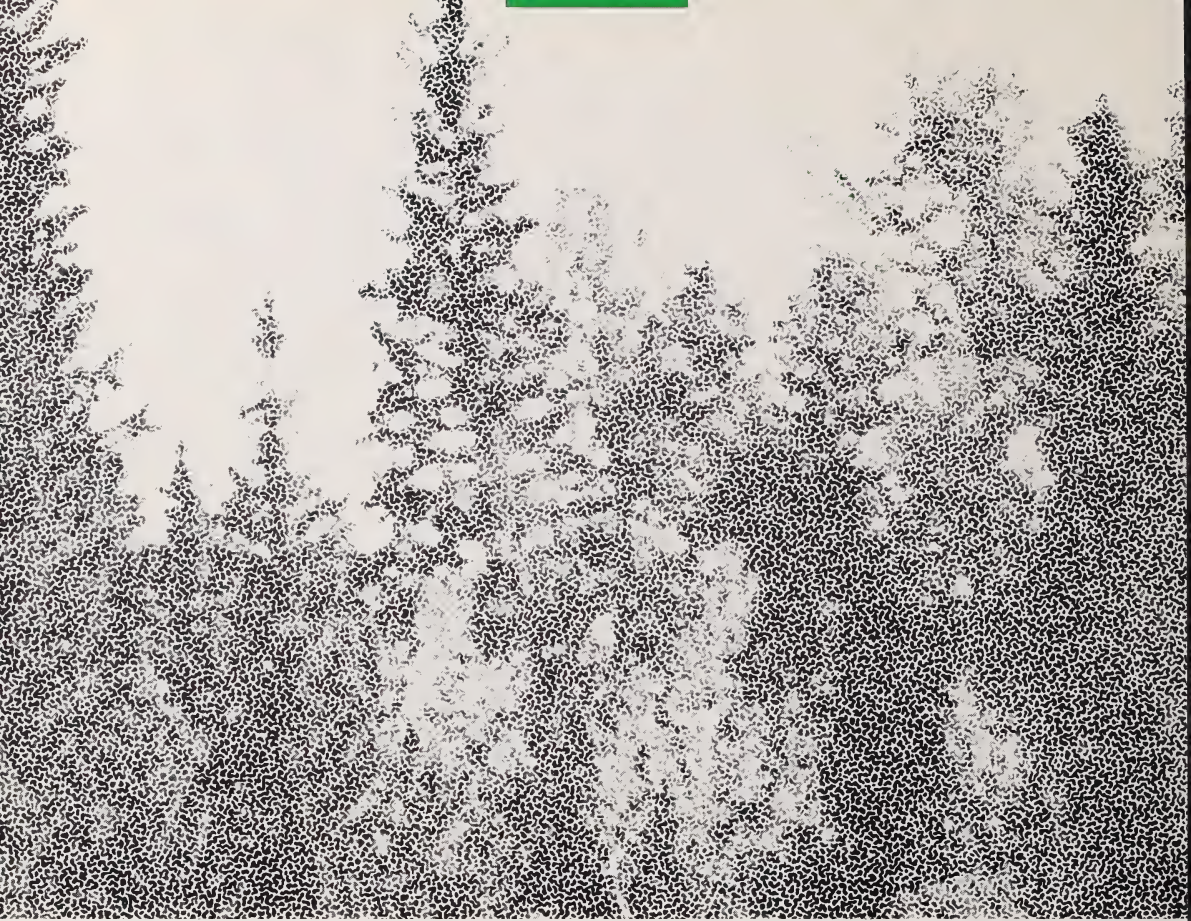
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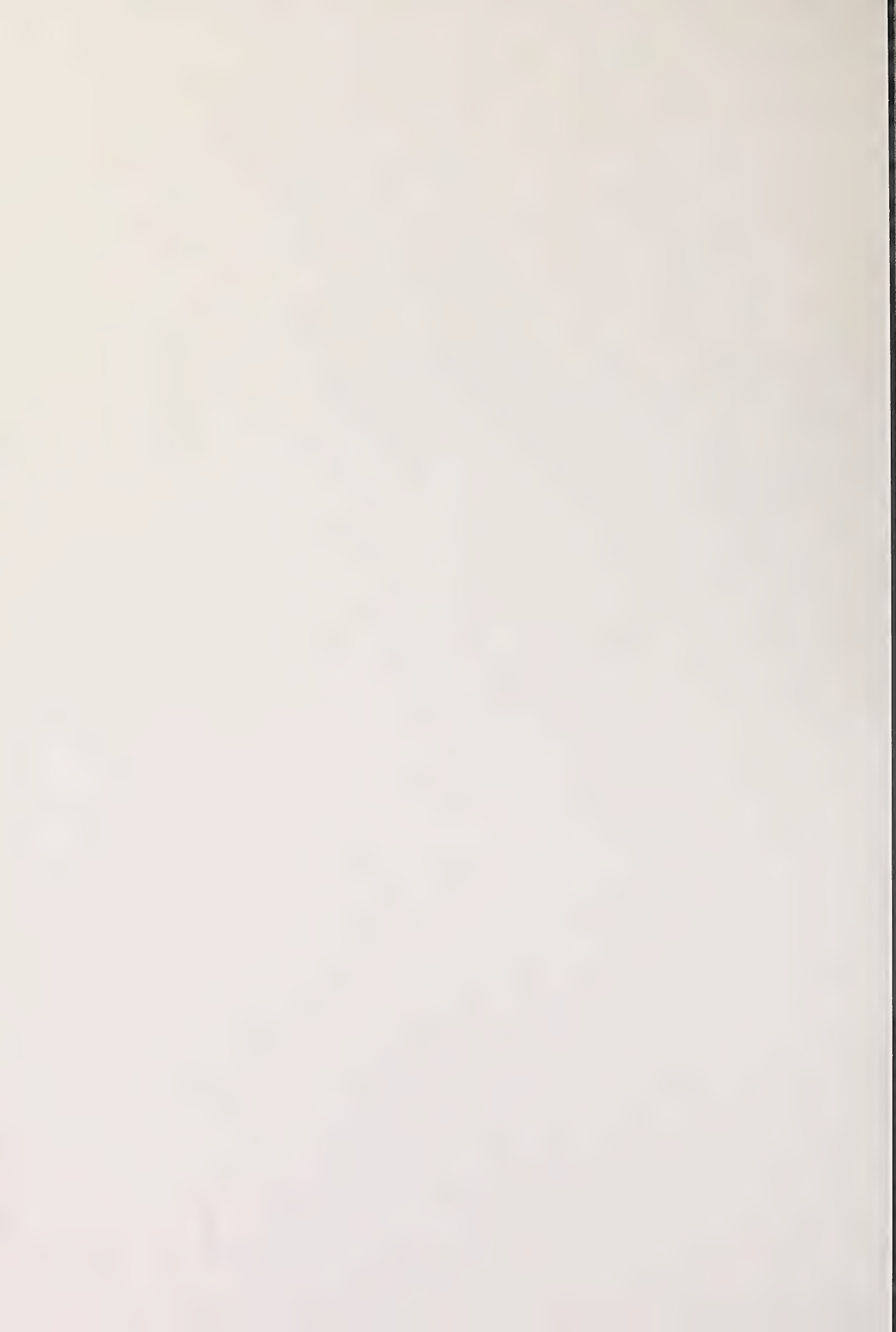




HIGH PRAIRIE

TIMBER DEVELOPMENT AREA







HIGH PRAIRIE

TIMBER DEVELOPMENT AREA



THE FOREST RESOURCE

Alberta's reserves constitute the largest supply of coniferous and deciduous timber available in North America. The High Prairie Timber Development Area (TDA) is one of Alberta's best aspen (poplar) development opportunities. The development of areas similar to the High Prairie TDA has made Alberta a dynamic force in the forest industry in Canada, and around the world. Alberta's primary hardwood species, trembling aspen (*Populus tremuloides*), predominates in the High Prairie area, and is suitable for the production of waferboard, oriented strandboard, particleboard and other panel products.

High Prairie Timber Development Area Resource Overview

Deciduous Annual Allowable Cut	571,100 cubic meters (133,066,000 board feet)
Gross Area	824,014 hectares (2,035,315 acres)

QUALITY OF RESOURCE

The High Prairie Timber Development Area is located in central Alberta, approximately 364 kilometres (226 miles) north of Edmonton and 199 kilometres (124 miles) east of Grande Prairie. The total area of the High Prairie TDA is 824,014 hectares (2,035,315 acres) and can be broken down by productivity class as follows:

Productive	572,571 hectares (1,414,251 acres)
Potentially Productive	24,724 hectares (61,068 acres)
Non-productive	226,719 hectares (559,996 acres)

The forest cover in the TDA is primarily hardwood, with trembling aspen predominating. The trembling aspen volume in the area has been estimated at approximately 21 million cubic meters (4.9 billion board feet). Growth rates in aspen range up to 2.41 cubic meters/hectare/year (228 board feet/acre/year) at 90 years of age. In mature and overmature deciduous stands, likely to be harvested over the next 20 years, the approximate average tree size is 23.0 meters (75.5 feet) in height, and 30.1 centimeters (11.9 inches) in diameter at breast height. The average volume per tree is 0.67 cubic meters (156 board feet - "Alberta log rule").

For deciduous stands at or near maturity, advanced decay percentages range from 3.8 to 9.0 percent, increasing with stand height. The amount of decay present is highly variable and is influenced by a number of factors including site quality, tree growth, genetic constitution, stand density, and age. For aspen stands a high decay and subsequent mortality usually occurs after 100 years of age, with most stands having little or no volume at 180 years.

CULL PERCENTAGE (FOR PULP UTILIZATION)

- for deciduous stands likely to be harvested over the next 20 years

HEIGHT		CULL (as a percent of gross volume*)
METERS	FEET	
12 - 17	40 - 59	3.8
18 - 23	60 - 79	4.3
24 - 29	80 - 99	9.0

* 15 centimeters stump diameter and greater.

WOOD SUPPLY

DECIDUOUS WOOD SUPPLY

Seventy percent of this wood supply is available in pure aspen stands. The remainder is found in aspen-conifer mixedwood stands. This is readily available through integrated harvesting of the mixed stands in conjunction with coniferous timber operators in the area. The timber operators are:

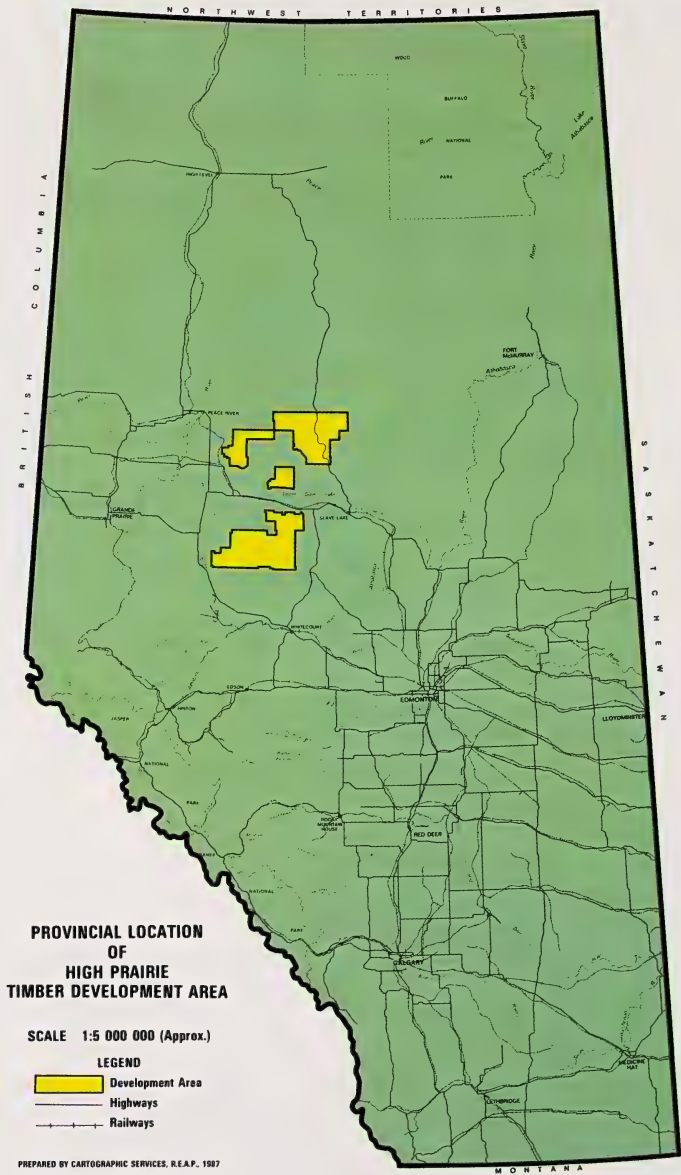
Quota Holder	Address
Jean Noel Audy	Nampa, Alberta T0H 2R0
Gordon Buchanan	Box 38 High Prairie, Alberta T0G 1E0
Bissell Bros. Lumber Ltd.	Box 60 Enilda, Alberta T0G 0W0
Zeidler Forest Industries Ltd. and Margaret Zeidler	Box 4370 Edmonton, Alberta T6E 1N8

Annual Allowable Cut	Committed	Uncommitted
571,100 cubic meters (133,066,000 board feet)	0 cubic meters	571,100 cubic meters (133,066,000 board feet)
<p>In addition to the supply of roundwood in the Timber Development Area there is a large supply of aspen on the private lands and within the Metis Settlements adjacent to High Prairie. This resource is significant both in terms of its extent and proximity to High Prairie. The developer of the TDA would be able to obtain this additional wood supply through purchase agreements with the Metis colonies and private land owners.</p>		

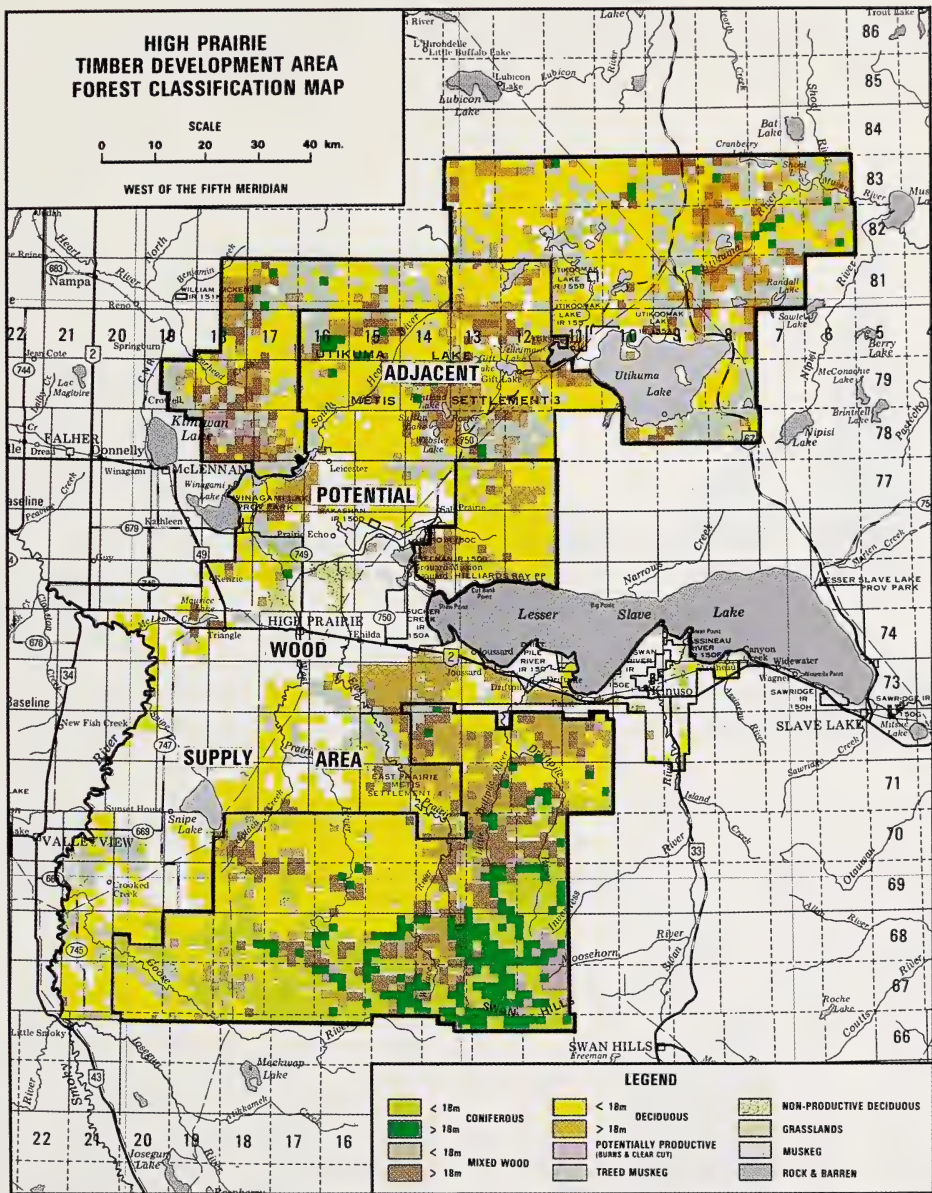
RESEARCH & DEVELOPMENT

A recent study by Morrison-Knudsen concluded that it is both technically and economically feasible to produce oriented strandboard (OSB) from sawmill residues namely slabs, edgings and pulp chips. The process involves maxi-chipping residues, followed by ring flaking and the use of Morrison-Knudsen's patented electrostatic orientator in the forming line. Incorporation of this type of system would eliminate the need for a full fledged green log yard and ancillary equipment thus reducing capital costs of a new plant by at least 10%.

TDA LOCATION



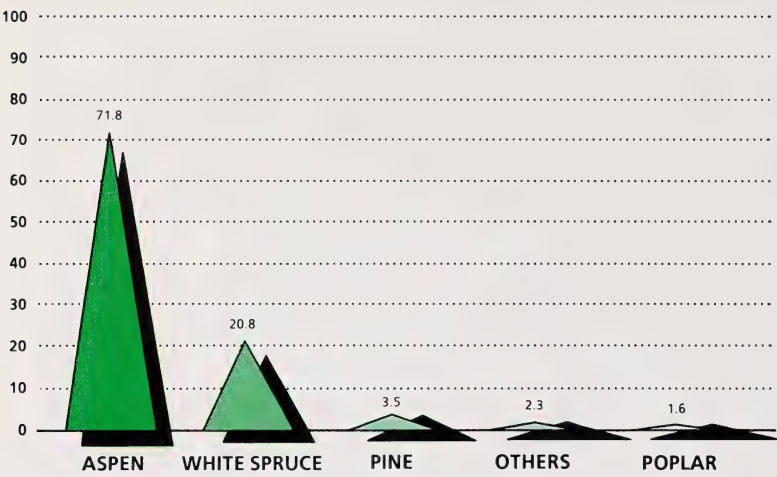
CLASSIFICATION MAP



DECIDUOUS LAND BASE

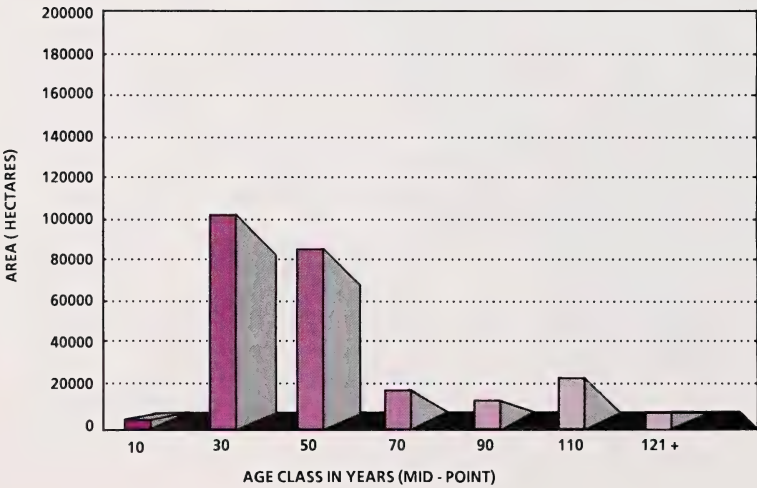
PERCENT VOLUME BY SPECIES

HIGH PRAIRIE TDA DECIDUOUS LAND BASE



AREA BY AGE CLASS

HIGH PRAIRIE TDA DECIDUOUS LAND BASE



STAND/STOCK TABLE**MATURE DECIDUOUS LAND BASE****Utilization Standards:** Minimum Stump Diameter = 15 cm (6 inch)

Minimum Top Diameter (inside bark) = 10 cm (4 inch)

DBH (CM)	DBH (INCH)	NS/HA	NS/ACRE	GROSS VOLUME (CU M/HA)	GROSS VOLUME (FBM/AC)
12	4.7	36	14	NIL	NIL
14	5.5	35	14	2	189
16	6.3	37	15	5	471
18	7.1	27	11	4	377
20	7.9	25	10	5	471
22	8.7	23	9	6	566
24	9.4	23	7	8	754
26	10.2	24	10	12	1,132
28	11.0	18	7	10	943
30	11.8	19	8	13	1,226
32	12.6	21	9	17	1,603
34	13.4	18	7	16	1,509
36	14.2	15	6	15	1,414
38	15.0	11	4	12	1,132
40	15.7	11	4	14	1,320
42	16.5	7	3	10	943
44	17.3	6	2	10	943
46	18.1	5	2	8	754
48	18.9	3	1	7	660
50	19.7	2	1	5	471
52	20.5	2	1	5	471
54	21.3	2	1	3	283
56	22.0	1	0	3	283
58	23.5	1	0	2	189
AVERAGE DBH			30.1 centimeters		
AVERAGE HEIGHT			23.0 meters		
GROSS VOLUME/TREE			0.674 cubic meters		
CULL %			5.01		

CM = CENTIMETERS
 DBH = DIAMETER BREAST HEIGHT
 NS = NUMBER OF STEMS

HA = HECTARE
 CU M/HA = CUBIC METERS/HECTARE
 FBM/AC = BOARD FEET/ACRE

PROVINCIAL FULLY STOCKED YIELD TABLES**HARDWOODS MEDIUM SITE****Utilization Standards:** Minimum Stump Diameter = 15 cm (6 inch)

Minimum Top Diameter (inside bark) = 10 cm (4 inch)

TOTAL AGE (YR)	TOP HEIGHT (M)	TOP HEIGHT (FT)	GROSS VOLUME (CU M/HA)	GROSS VOLUME (MFBM/AC)	GROSS MAI (CU M/HA/YR)	GROSS VOLUME (FBM/AC/YR)	NO. OF TREES (PER HA)	NO. OF TREES (PER AC)
10	4.2	13.7	0.0	0.0	0.0	0.0	0	0
20	9.0	29.4	0.0	0.0	0.0	0.0	0	0
30	12.7	41.5	0.0	0.0	0.0	0.0	0	0
40	15.5	50.8	7.8	0.7	0.19	18.3	138	56
50	17.7	58.1	70.0	6.6	1.40	131.9	544	220
60	19.5	63.8	119.3	11.3	1.99	187.5	617	250
70	20.9	68.4	158.8	15.0	2.27	214.0	615	249
80	22.0	72.1	190.9	18.0	2.39	225.0	592	240
90	22.9	75.3	217.1	20.5	2.41	227.5	565	229
100	23.7	77.9	238.9	22.5	2.39	225.3	540	219

CM = CENTIMETERS
 YR = YEARS
 M = METERS
 FT = FEET
 CU M/HA = CUBIC METERS/HECTARE

CU M/HA/YR = CUBIC METERS/HECTARE/YEAR
 MAI = MEAN ANNUAL INCREMENT
 FBM/AC/YR = BOARD FEET/ACRE/YEAR
 HA = HECTARE
 AC = ACRE

COMMUNITY PROFILE - HIGH PRAIRIE

The town of High Prairie is central to the three component areas of the High Prairie Timber Development Area. High Prairie has a positive attitude towards economic development and is in a position to provide a full array of

municipal services. The economic base of High Prairie is derived from timber, agriculture, and natural gas. A profile of the community is given below:

POPULATION	2,580
LABOUR FORCE - male	695
- female	530
- a number of independent logging contractors, with considerable woods operation experience are located in High Prairie.	
DISTANCE FROM MAJOR CENTRES	364 kilometers (226 miles) northwest of Edmonton
CONNECTING HIGHWAYS	#2 - high standard, paved #749 - high standard, paved
RAILWAY	Canadian National Railway
AIRPORT - longest runway	1,067 meters (3,500 feet) paved surface, night operation
WATER - major river - (Little Smokey)	located approximately 27 kilometers (17 miles) west of High Prairie
- Flow rate	8 cubic meters/second (2,928 cubic feet/second) average from May to October
ELEVATION	594 meters (1,949 feet)
TEMPERATURE - seasonal averages	winter -18.6° centigrade (-1.4°F) summer +15.5° centigrade (59.8°F)
ANNUAL PRECIPITATION - rain	316.6 millimeters (12.46 inches)
- snow	149.1 centimeters (58.70 inches)
- total	468.1 millimeters (18.42 inches)
FROST FREE DAYS	95
ELECTRICAL POWER - industrial rates	Alberta Power Ltd. \$7.05 - \$13.85 per month per kilowatt dependent on demand plus \$0.012 - \$0.017 per kilowatt energy charge. Rebates are available which may amount to as much as a 35% reduction in these rates.
NATURAL GAS - industrial rates	Town of High Prairie. \$25 per month plus \$2.41 per thousand cubic feet. The rates indicated are approximate guidelines. Each application is dealt with on an individual basis as rates vary with consumption and seasonal demand requirements.
MILL RATE - industrial	\$177.57/\$1000 assessed tax value
- residential	\$141.17/\$1000 assessed tax value

PER CAPITA DEBT	\$1,282.34 (1982)
MEDICAL	1 Hospital (76 beds) 6 Doctors 1 Dentist
EDUCATION	2 Daycare/Nursery 2 Elementary (Grades 1 - 6) 2 Junior High (Grades 7 - 9) 1 High School (Grades 10 - 12) Alberta Vocational School, Grouard
RECREATION	Swimming, Tennis, Skating, Curling, Hunting, Baseball, Fishing, Golf, Boating

COMMUNITY PROFILE - McLENNAN

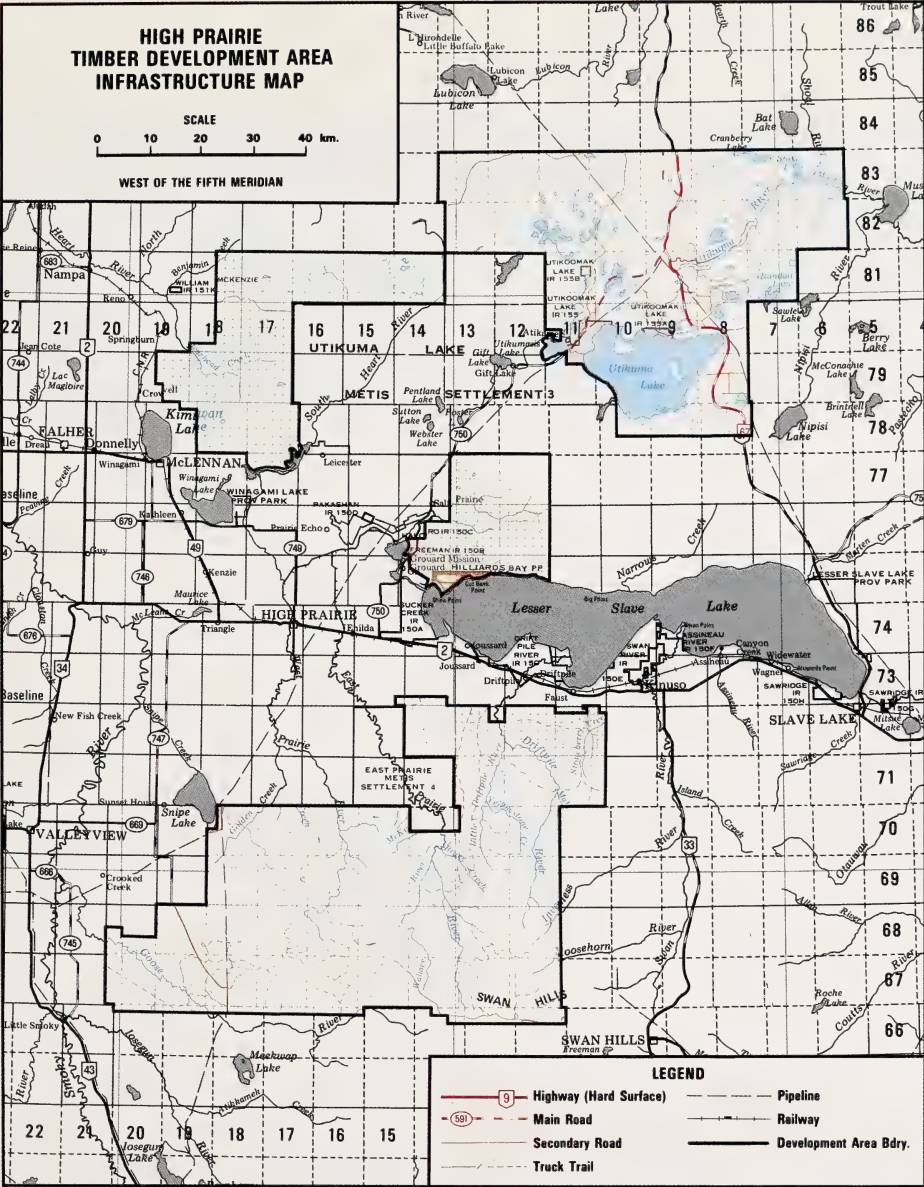
The town of McLennan is strategically located near the three component areas of the High Prairie Timber Development Area. McLennan is a progressive community and has a positive attitude to economic development.

Agriculture, natural gas and the forest industry now provide the diversity of resources which contribute to the stable economic base. A profile of the community is given below:

POPULATION	1,176
LABOUR FORCE - male	250
- female	230
- a number of independent logging contractors, with considerable woods operation experience are located in McLennan.	
DISTANCE FROM MAJOR CENTRES	76 kilometers (47 miles) southeast of Peace River 187 kilometers (116 miles) northeast of Grande Prairie 438 kilometers (272 miles) northwest of Edmonton
CONNECTING HIGHWAYS	#49 - high standard, paved #2 - high standard, paved
RAILWAY	Canadian National Railway
AIRPORT - longest runway	912 meters (3,000 feet) paved surface, night operation
WATER	McLennan is located at the southern end of Kimiwan Lake.
ELEVATION	623 meters (2,044 feet)
TEMPERATURE - seasonal averages	winter -18.9° centigrade (-2.0°F) summer +15.9° centigrade (60.6°F)

ANNUAL PRECIPITATION - rain	308.3 millimeters (12.1 inches)
	- snow
	159.6 centimeters (62.8 inches)
- total	468.7 millimeters (18.5 inches)
FROST FREE DAYS	100
ELECTRICAL POWER - industrial rates	Alberta Power Ltd. \$7.05 - \$13.85 per month per kilowatt dependent on demand plus \$0.012 - \$0.017 per kilowatt energy charge. Rebates are available which may amount to as much as a 35% reduction in these rates.
NATURAL GAS - industrial rates	Northwestern Utilities Ltd. \$2.150 per gigajoule per month with a minimum monthly charge of \$122.25 per month. The rates indicated are approximate guidelines. Each application is dealt with on an individual basis as rates vary with consumption and seasonal demand requirements.
MILL RATE - industrial	\$35.40/\$1000 assessed tax value
	- residential
PER CAPITA DEBT	\$30.61/\$1000 assessed tax value
MEDICAL	\$747.00 (1983)
EDUCATION	1 Hospital (63 beds)
	4 Doctors
	Dentists (mobile unit)
	1 Kindergarten (pre-school)
	2 Elementary (Grades 1 - 6)
RECREATION	1 Junior High (Grades 7 - 9)
	1 High School (bussed to Donnelly 12 kilometers west)
	Alberta Vocational Centre
	Library, Baseball, Boating, Hunting, Tennis, Golf
	Skating, Fishing

INFRASTRUCTURE MAP



PREPARED BY CARTOGRAPHIC SERVICES, R.E.A.P., 1997.

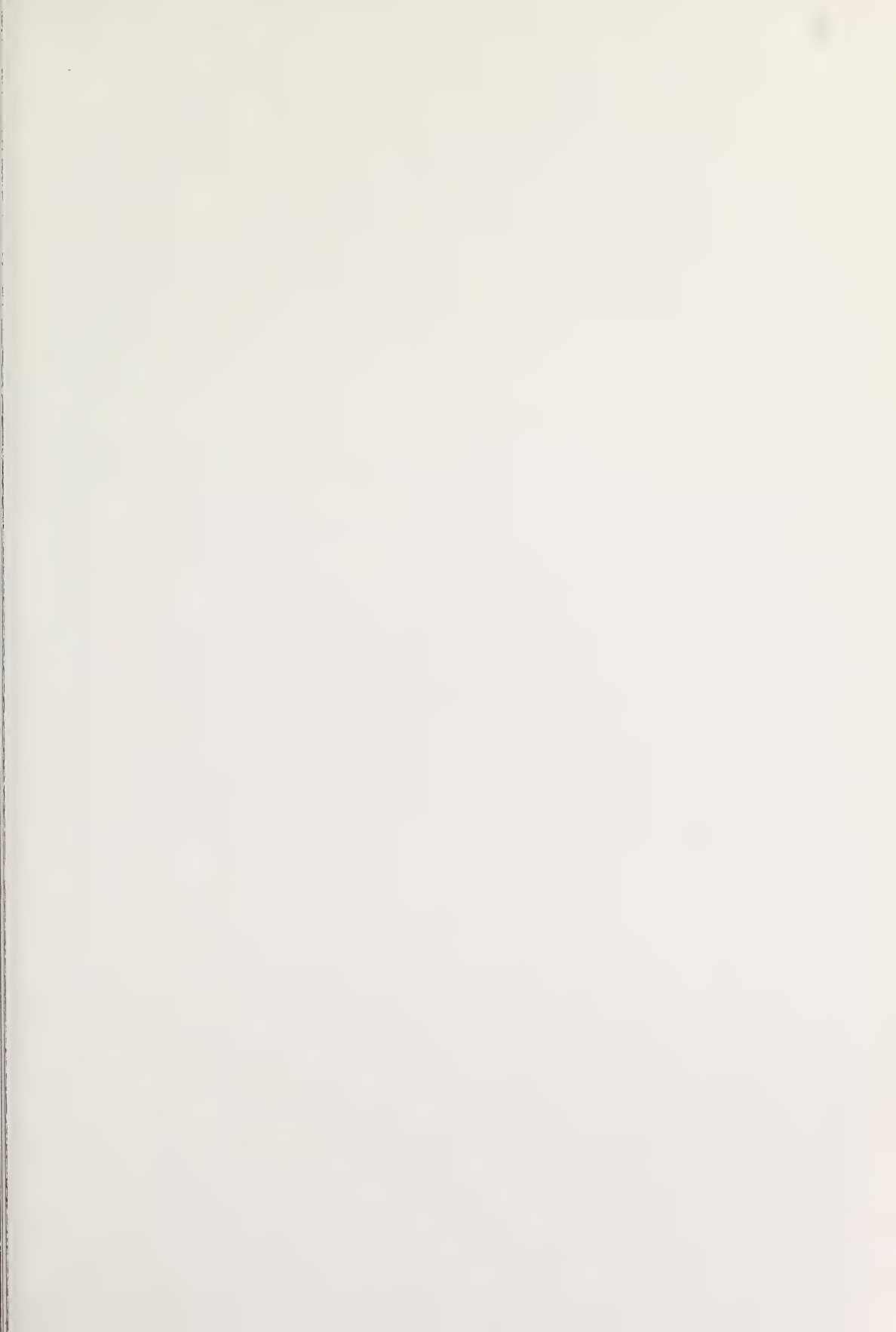
CONTACTS

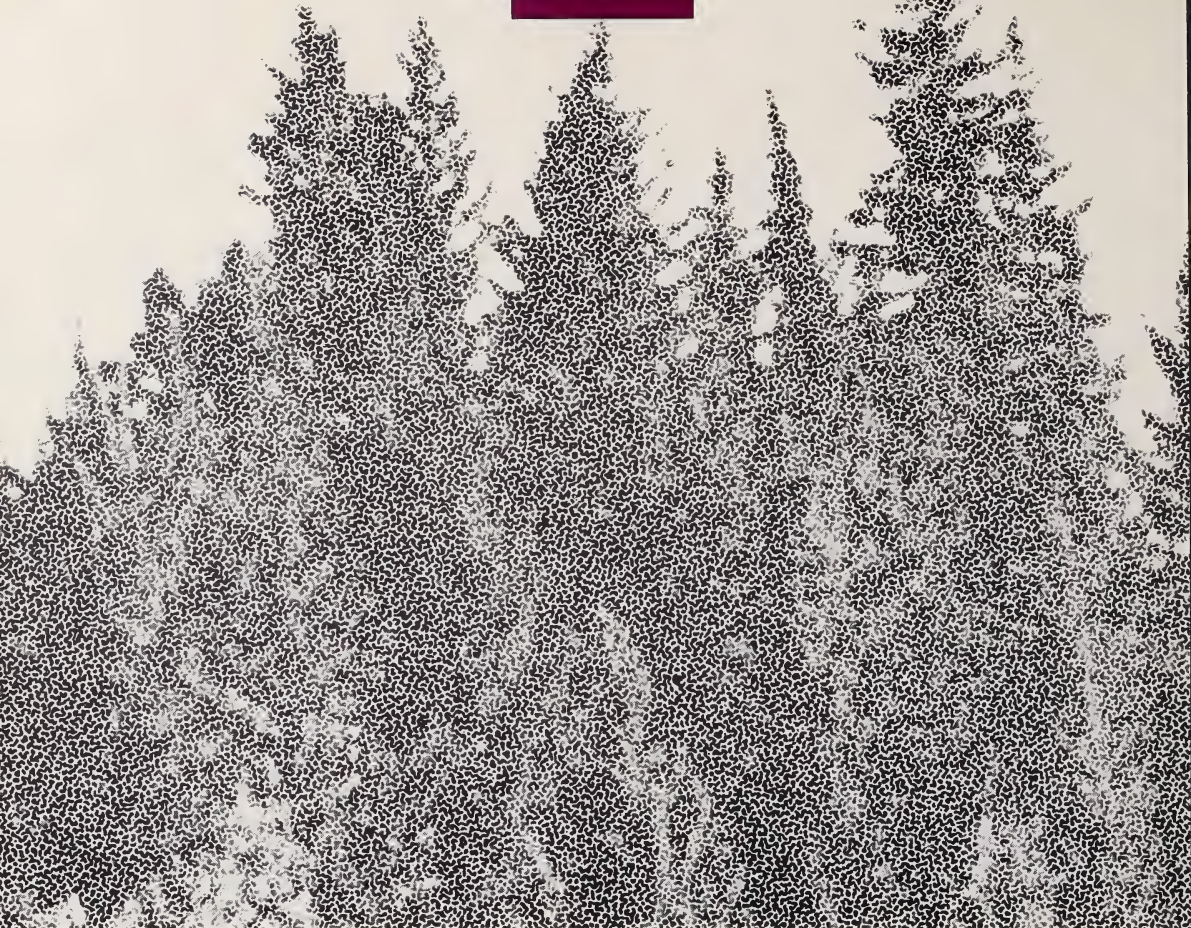
To assist prospective applicants in preparing their proposal for the High Prairie Timber Development Area, a list of contact persons with Alberta Forestry, Lands and Wildlife is included.

Department	Contact Person
Alberta Forestry, Lands and Wildlife 9915 - 108 Street Edmonton, Alberta T5K 2C9	Mr. F.W. McDougall Deputy Minister Forestry, Lands and Wildlife (403) 427-3552
	Mr. C.B. Smith Assistant Deputy Minister Alberta Forest Service (403) 427-3542

Also, in order to meet the growing demands of the forest industry the Forest Industry Development Division was organized within the Department of Forestry, Lands and Wildlife. The role of this new division is to assist new and existing forest companies and private investors to upgrade and utilize Alberta's vast uncommitted forest resources for a variety of forest products. The division is made up of people that can offer expertise in all aspects of forestry.

Mr. J.A. Brennan
Executive Officer
Forest Industry Development Division
930, 9942 - 108 Street
Edmonton, Alberta
T5K 2J5
(403) 422-7011









**SLAVE LAKE
ATHABASCA
LAC LA BICHE**
TIMBER DEVELOPMENT AREA







**SLAVE LAKE
ATHABASCA
LAC LA BICHE**
TIMBER DEVELOPMENT AREA



THE FOREST RESOURCE

Alberta's reserves constitute the largest supply of coniferous and deciduous timber available in North America. This Timber Development Area (TDA) is one of Alberta's best aspen-spruce mixedwood development opportunities. Because areas similar to the Slave Lake/Athabasca/Lac La Biche TDA have already been developed, Alberta has become a dynamic force in the forest industry in Canada, and around the world. The predominant species in the TDA area is trembling aspen (*Populus tremuloides*), followed by white spruce (*Picea glauca*) and pine (*Pinus banksiana*). The aspen and the conifers are found in pure stands and in association with each other in mixedwood stands. These species when combined with available spruce/pine woodchips from sawmills in the area are suitable for production of high quality pulp, newsprint or other related products.

Slave Lake/Athabasca/Lac La Biche Timber Development Area Resource Overview

Deciduous Annual Allowable Cut	579,700 cubic meters (135,070,000 board feet)
Coniferous Annual Allowable Cut	218,100 cubic meters (50,817,000 board feet)
Total Annual Allowable Cut	797,800 cubic meters (185,887,000 board feet)
Gross Area	2,103,769 hectares (5,196,309 acres)
Additional wood supply	
Coniferous Annual Allowable Cut	60,000 cubic meters (13,980,000 board feet)

QUALITY OF RESOURCE

The Slave Lake/Athabasca/Lac La Biche Timber Development Area is located in north eastern Alberta, approximately 157 kilometers (98 miles) north of Edmonton. The total area of the TDA is 2,103,769 hectares (5,196,309 acres), and can be broken down by productivity class as follows:

Productive	1,076,853 hectares (2,659,827 acres)
Potentially Productive	107,448 hectares (265,396 acres)
Non-productive	919,468 hectares (2,271,086 acres)

The forest cover in the TDA is a combination of hardwoods and softwoods. Trembling aspen, (*Populus tremuloides*), white spruce (*Picea glauca*) and pine (*Pinus banksiana*) predominate. The trembling aspen and coniferous volume in the area is 21 million cubic meters (4.9 billion board feet) and 14 million cubic meters (3.3 billion board feet) respectively.

Growth rates in aspen range up to 2.41 cubic meters/hectare/year (228 board feet/acre/year) at 90 years of age. In mature and overmature

stands, likely to be harvested over the next 20 years, the approximate average aspen tree size is 23.0 meters (75.5 feet) in height, and 26.8 centimeters (10.5 inches) in diameter at breast height. The average volume per aspen tree is 0.51 cubic meters (119 board feet - "Alberta log rule").

Growth rates in coniferous stands range up to 2.43 cubic meters/hectare/year (229 board feet/acre/year) at maturity; little reduction in growth rate is evident in overmature stands. In stands ready to harvest over the next twenty years, average coniferous tree size is 22.4 meters (73.5 feet) in height, and 26.0 centimeters (10.2 inches) in diameter at breast height. Average volume per tree is 0.44 cubic meters (103 board feet - "Alberta log rule").

For deciduous stands at or near maturity, advanced decay percentages range from 3.8 to 5.9 percent, increasing with stand height. The amount of decay present is highly variable and is influenced by a number of factors including site quality, tree growth, genetic constitution, stand density and age. For deciduous stands a high decay and subsequent mortality occurs after 100 years of age, with most stands having little or no merchantable deciduous volume at 180 years.



For coniferous stands at or near maturity, advanced decay percentages are remarkably low, particularly in slower growing stands. Even older stands are virtually defect free.

**CULL PERCENTAGE
(FOR PULP UTILIZATION)**

- for stands likely to be harvested over the next 20 years

HEIGHT		CULL (as a percent of gross volume*)	
METERS	FEET	CONIFEROUS	DECIDUOUS
12 - 17	40 - 59	2.0	3.8
18 - 23	60 - 79	1.7	4.2
24 - 29	80 - 99	1.8	5.9

* 15 centimeters stump diameter and greater.

WOOD SUPPLY

The coniferous wood chip supply is available for purchase from the sawmills close to and within the TDA. At present these operators are capable of producing 121,000 bone dry units of chips. With future allocations of timber resources there will be a potential addition of 83,600 bone dry units of woodchips available.

Approximately two thirds of the deciduous wood supply is found in pure stands of aspen.

The remainder is found in deciduous-coniferous mixedwood stands. This is readily available through integrated harvesting of the mixed stands in conjunction with coniferous timber operators in the area. The timber operators are also the suppliers of coniferous woodchips.

**CONIFEROUS WOOD SUPPLY -
from the conifer roundwood supply area**

Annual Allowable Cut	Committed	Uncommitted
218,100 cubic meters (50,817,000 board feet)	0 cubic meters	218,100 cubic meters (50,817,000 board feet)

Uncommitted
60,000
cubic meters
(13,980,000
board feet)

ADDITIONAL WOOD SUPPLY
Coniferous (smaller diameter roundwood)

Coniferous Wood Chips

		Uncommitted
- existing	121,000 Bone dry units	342,500 cubic meters
- potential (future allocations)	83,600 Bone dry units	236,700 cubic meters

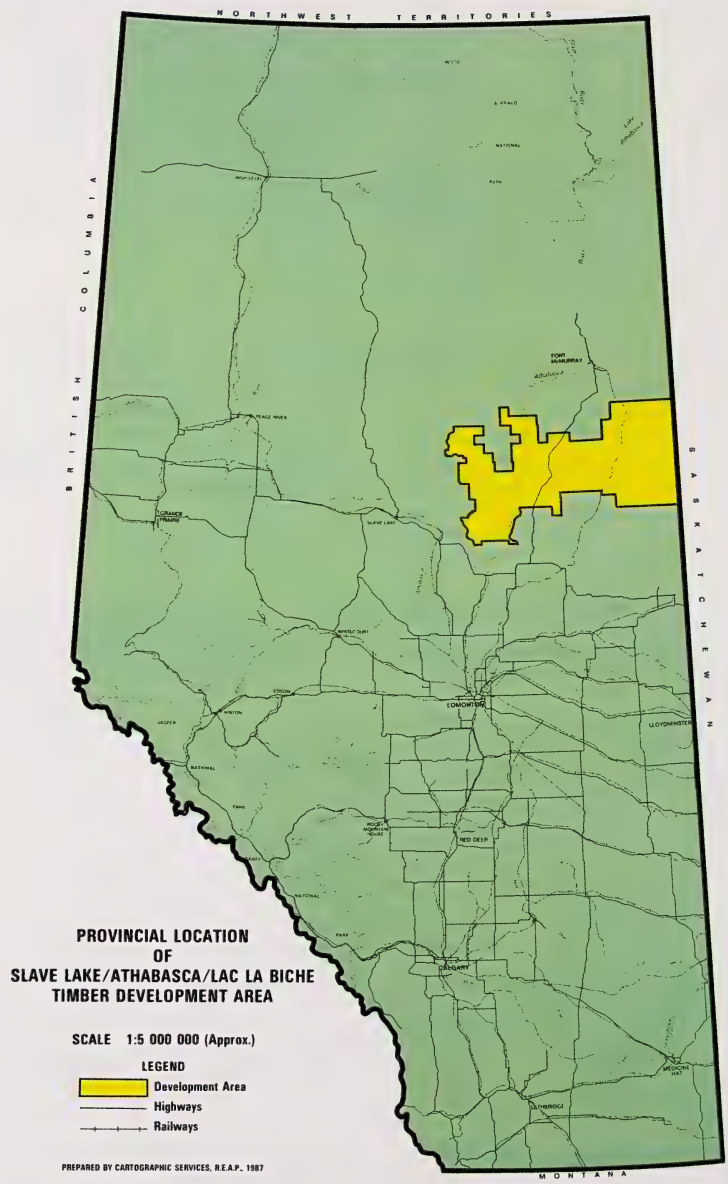
**DECIDUOUS WOOD SUPPLY -
from the entire TDA**

Annual Allowable Cut	Committed	Uncommitted
579,700 cubic meters (135,070,000 board feet)	0 cubic meters	579,700 cubic meters (135,070,000 board feet)

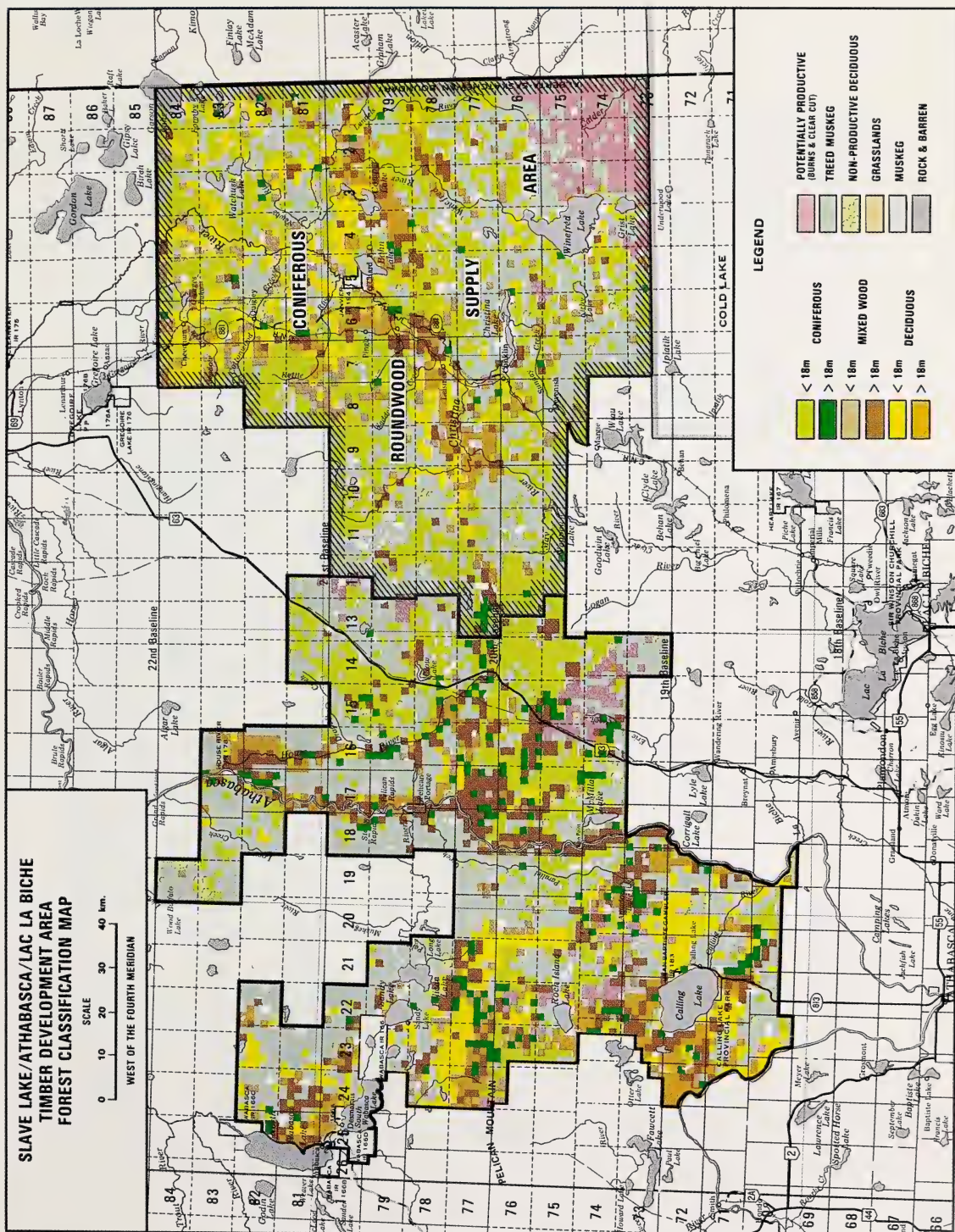
**TOTAL WOOD
SUPPLY AVAILABLE
ANNUALLY** 1,437,000 cubic meters



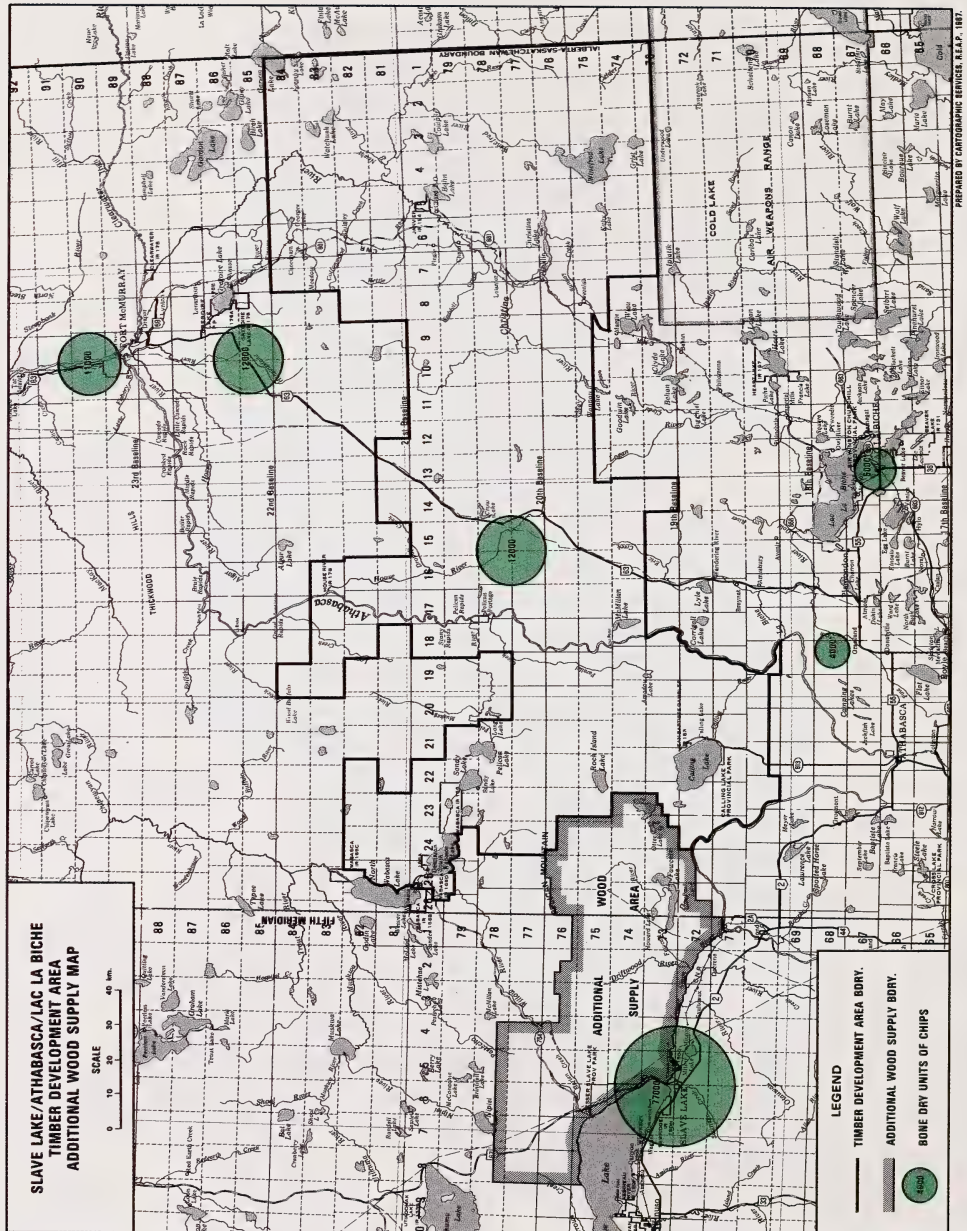
TDA LOCATION



CLASSIFICATION MAP



ADJACENT WOOD SUPPLY MAP



CONIFEROUS TIMBER OPERATORS AND WOOD CHIP SUPPLY

Mill Location	Company name and address	Supply (1000 Bone dry units)
Slave Lake	Zeidler Forest Industries Ltd. and Margaret Zeidler Box 4370 Edmonton, Alberta T6E 1N9	52
Slave Lake	Vanderwell Holdings Ltd. Box 415 Slave Lake, Alberta T0G 2A0	25
Grassland	Spruce Valley Mills Ltd. RR #1 Boyle, Alberta T0M 0M0	4
Lac La Biche	Ed Bobocel Lumber Co. Ltd. Box 1150 Lac La Biche, Alberta T0A 2C0	5
Hanging Stone	Pelican Spruce Mills Ltd.	12
House River	11550 - 154 Street Edmonton, Alberta T5M 3N8	12
Fort McMurray	Northland Forest Products Ltd. Box 5306 Fort McMurray, Alberta T9H 3G4	11

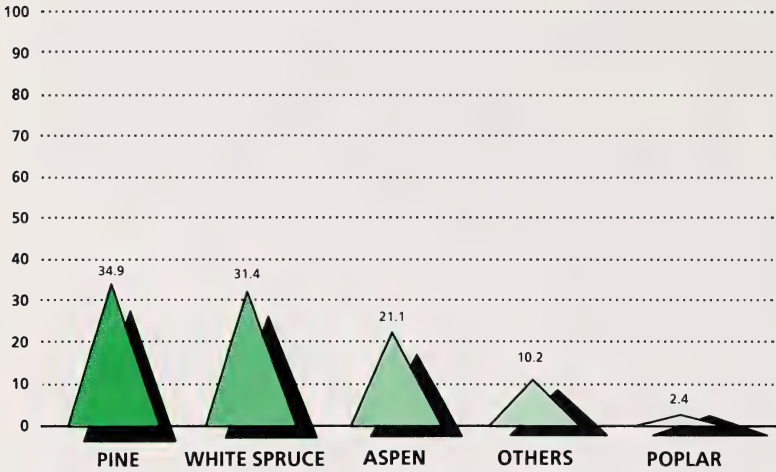
TOTAL 121

In addition to the supply of roundwood in the Timber Development Area there is a significant supply of aspen on the private lands and Metis Settlements adjacent to the TDA. This resource is significant both in terms of its extent and proximity to the TDA. The developer of the TDA would be able to obtain this additional wood supply through purchase agreements with the Metis colonies and private land owners.

CONIFEROUS LAND BASE

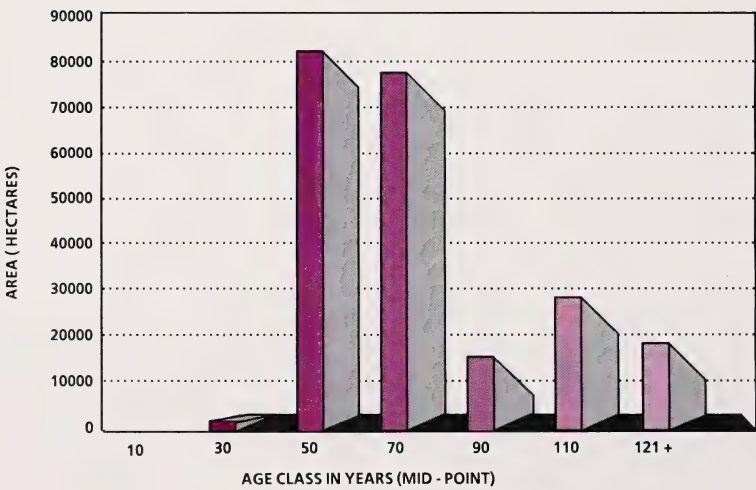
PERCENT VOLUME BY SPECIES

SLAVE LAKE/ATHABASCA/LAC LA BICHE TDA



AREA BY AGE CLASS

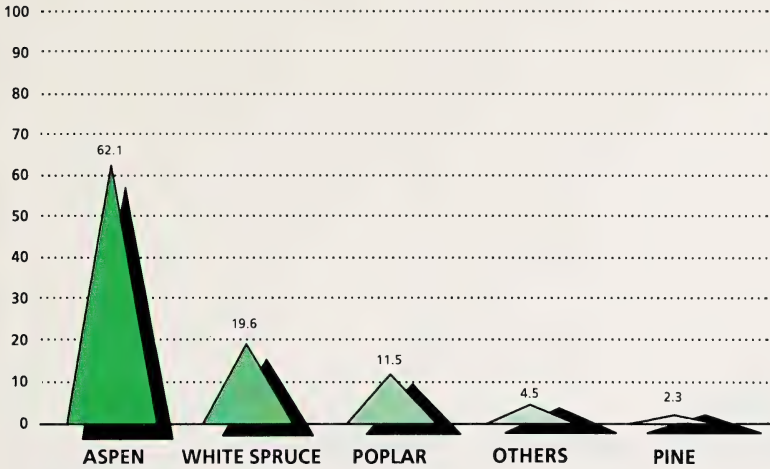
SLAVE LAKE/ATHABASCA/LAC LA BICHE TDA



DECIDUOUS LAND BASE

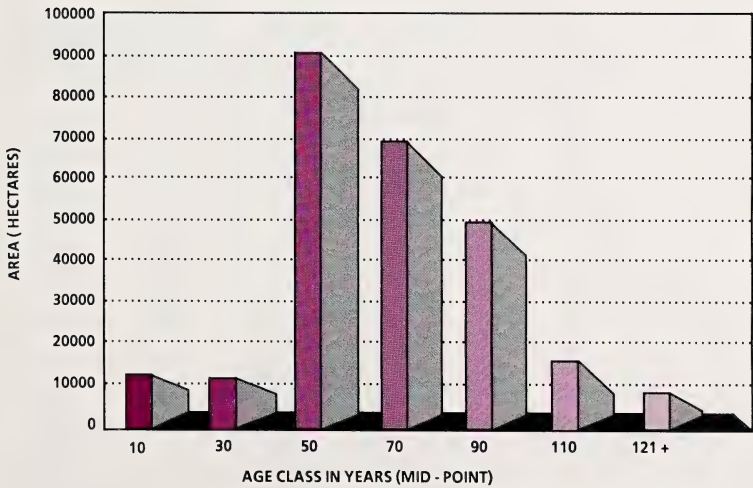
PERCENT VOLUME BY SPECIES

SLAVE LAKE/ATHABASCA/LAC LA BICHE TDA



AREA BY AGE CLASS

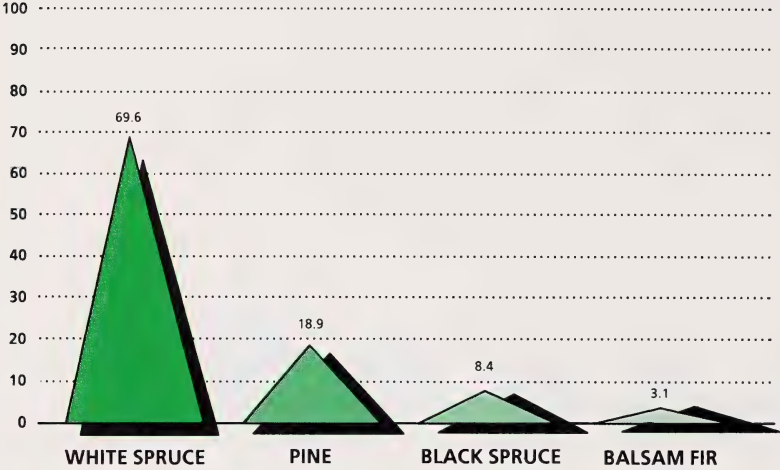
SLAVE LAKE/ATHABASCA/LAC LA BICHE TDA



CONIFEROUS WOOD CHIP SUPPLY

PERCENT VOLUME BY SPECIES

(EXISTING AND POTENTIAL)
SLAVE LAKE/ATHABASCA/LAC LA BICHE TDA



PROVINCIAL FULLY STOCKED YIELD TABLES WHITE SPRUCE MEDIUM SITE

Utilization Standards: Minimum Stump Diameter = 15 cm (6 inch)
Minimum Top Diameter (inside bark) = 10 cm (4 inch)

TOTAL AGE (YR)	TOP HEIGHT (M)	TOP HEIGHT (FT)	GROSS VOLUME (CU M/HA)	GROSS VOLUME (MFBM/AC)	GROSS MAI (CU M/HA/YR)	GROSS VOLUME (FBM/AC/YR)	NO. OF TREES (PER HA)	NO. OF TREES (PER AC)
10	0.0	0	0.0	0.0	0.0	0.0	0	0
20	1.8	6	0.0	0.0	0.0	0.0	0	0
30	4.6	15	0.0	0.0	0.0	0.0	0	0
40	7.6	25	0.0	0.0	0.0	0.0	0	0
50	10.6	35	1.6	0.2	0.03	3.1	35	8
60	13.4	44	50.6	4.8	0.84	79.5	404	93
70	15.9	52	97.8	9.2	1.40	131.7	537	123
80	18.2	60	141.9	13.4	1.77	167.3	597	137
90	20.3	66	182.5	17.2	2.03	191.2	622	143
100	22.1	72	219.2	20.7	2.19	206.8	629	144
110	23.7	78	252.2	23.8	2.29	216.3	627	144
120	25.1	82	281.8	26.6	2.35	221.5	620	142
130	26.3	86	308.1	29.1	2.37	223.6	611	140
140	27.5	90	331.6	31.3	2.37	223.4	601	138
150	28.5	93	352.6	33.3	2.35	221.7	590	135
160	29.4	96	371.3	35.0	2.32	218.9	580	133
170	30.2	99	388.1	36.6	2.28	215.4	571	131
180	30.9	101	403.2	38.0	2.24	211.3	562	129

CM	= CENTIMETERS	CU M/HA/YR	= CUBIC METERS/HECTARE/YEAR
YR	= YEARS	MAI	= MEAN ANNUAL INCREMENT
M	= METERS	FBM/AC/YR	= BOARD FEET/ACRE/YEAR
FT	= FEET	HA	= HECTARE
CU M/HA	= CUBIC METERS/HECTARE	AC	= ACRE

STAND/STOCK TABLE MATURE LAND BASE

Utilization Standards: Minimum Stump Diameter = 15 cm (6 inch)
Minimum Top Diameter (inside bark) = 10 cm (4 inch)

DBH (CM)	DBH (INCH)	NS/HA	NS/ACRE	GROSS VOLUME (CU M/HA)	GROSS VOLUME (FBM/AC)
12	4.7	90	36	NIL	NIL
14	5.5	79	32	2	189
16	6.3	71	29	6	566
18	7.1	58	23	8	755
20	7.9	54	22	10	943
22	8.7	45	18	12	1,132
24	9.4	40	16	13	1,226
26	10.2	36	15	15	1,415
28	11.0	30	12	15	1,415
30	11.8	27	11	16	1,509
32	12.6	22	9	16	1,509
34	13.4	16	6	14	1,321
36	14.2	15	6	14	1,321
38	15.0	12	5	13	1,226
40	15.7	10	4	12	1,132
42	16.5	7	3	9	849
44	17.3	5	2	8	755
46	18.1	4	2	7	660
48	18.9	3	1	5	472
50	19.7	2	1	4	377
52	20.5	1	0	3	283
54	21.3	1	0	3	283
AVERAGE DBH				22.6 centimeters	
AVERAGE HEIGHT				21.7 meters	
GROSS VOLUME/TREE				0.345 cubic meters	
CULL %				2.81	

DBH = DIAMETER BREAST HEIGHT
NS = NUMBER OF STEMS
HA = HECTARE

CU M/HA = CUBIC METERS/HECTARE
FBM/AC = BOARD FEET/ACRE

PROVINCIAL FULLY STOCKED YIELD TABLES HARDWOODS MEDIUM SITE

Utilization Standards: Minimum Stump Diameter = 15 cm (6 inch)
Minimum Top Diameter (inside bark) = 10 cm (4 inch)

TOTAL AGE (YR)	TOP HEIGHT (M)	TOP HEIGHT (FT)	GROSS VOLUME (CU M/HA)	GROSS VOLUME (MFBM/AC)	GROSS MAI (CU M/HA/YR)	GROSS VOLUME (FBM/AC/YR)	NO. OF TREES (PER HA)	NO. OF TREES (PER AC)
10	4.2	13.7	0.0	0.0	0.0	0.0	0	0
20	9.0	29.4	0.0	0.0	0.0	0.0	0	0
30	12.7	41.5	0.0	0.0	0.0	0.0	0	0
40	15.5	50.8	7.8	0.7	0.19	18.3	138	56
50	17.7	58.1	70.0	6.6	1.40	131.9	544	220
60	19.5	63.8	119.3	11.3	1.99	187.5	617	250
70	20.9	68.4	158.8	15.0	2.27	214.0	615	249
80	22.0	72.1	190.9	18.0	2.39	225.0	592	240
90	22.9	75.3	217.1	20.5	2.41	227.5	565	229
100	23.7	77.9	238.9	22.5	2.39	225.3	540	219

CM = CENTIMETERS
YR = YEARS
M = METERS
FT = FEET
CU M/HA = CUBIC METERS/HECTARE

CU M/HA/YR = CUBIC METERS/HECTARE/YEAR
MAI = MEAN ANNUAL INCREMENT
FBM/AC/YR = BOARD FEET/ACRE/YEAR
HA = HECTARE
AC = ACRE

COMMUNITY PROFILE - SLAVE LAKE

The town of Slave Lake is central to the three component areas of the Slave Lake/Athabasca/Lac La Biche Timber Development Area. The town is situated on the shores of Lesser Slave Lake and offers an assortment of commercial and recreational

opportunities. Slave Lake has a positive attitude and has a diverse economic base built on several different industries such as oil and gas, forestry and commercial fishing. A profile of the community is given below:

POPULATION	5,434
LABOUR FORCE - male	1,370
- female	900
- a number of independent logging contractors, with considerable woods operation experience are located in Slave Lake.	
DISTANCE FROM MAJOR CENTRES	248 kilometers (154 miles) north of Edmonton 318 kilometers (199 miles) east of Grande Prairie
CONNECTING HIGHWAYS	#2 - high standard, paved #67 - high standard, paved
RAILWAY	Canadian National Railway
AIRPORT - longest runway	1,520 meters (5,000 feet) paved surface, night operation
WATER - major river - Slave River	(located within the town limits) - flow rate 60 cubic meters/second (2,119 cubic feet/second) - average from May to October
ELEVATION	582 meters (1,915 feet)
TEMPERATURE - seasonal averages	winter -18.7° centigrade (-17° F) summer +15.7° centigrade (60.3°F)
ANNUAL PRECIPITATION - rain	346.1 millimeters (13.6 inches)
- snow	135.3 centimeters (53.3 inches)
- total	475.4 millimeters (18.7 inches)
FROST FREE DAYS	95
ELECTRICAL POWER - industrial rates	Alberta Power Ltd. \$7.05 - \$13.85 per month per kilowatt dependent on demand plus \$0.012 - \$0.017 per kilowatt - hour energy charge. Rebates are available which may amount to as much as a 35% reduction in these rates.
NATURAL GAS - industrial rates	Town of Slave Lake. \$2.49 - \$2.75 per thousand cubic feet plus \$7.50 - \$500.00 service charge per month. The rates indicated are approximate guidelines. The rate will depend on the size of the operation and the demand for gas per month.

MILL RATE - industrial	\$50.00/\$1000 assessed tax value
- residential	\$40.00/\$1000 assessed tax value
PER CAPITA DEBT	\$720.00 (1983)
MEDICAL	1 Hospital (34 beds) 8 Doctors 1 Medical Clinic 2 Dentists
EDUCATION	1 Playschool 2 Day Care/Nursery 1 Elementary (Grades 1 - 6) 1 Junior High (Grades 7 - 9) 1 High School (Grades 10 - 12) 1 Vocational School
RECREATION	Skating, Hunting, Golf, Baseball, Camping, Curling, Hockey, Boating, Skiing, Swimming, Sailing, Fishing, Tennis, Racquetball

COMMUNITY PROFILE - ATHABASCA

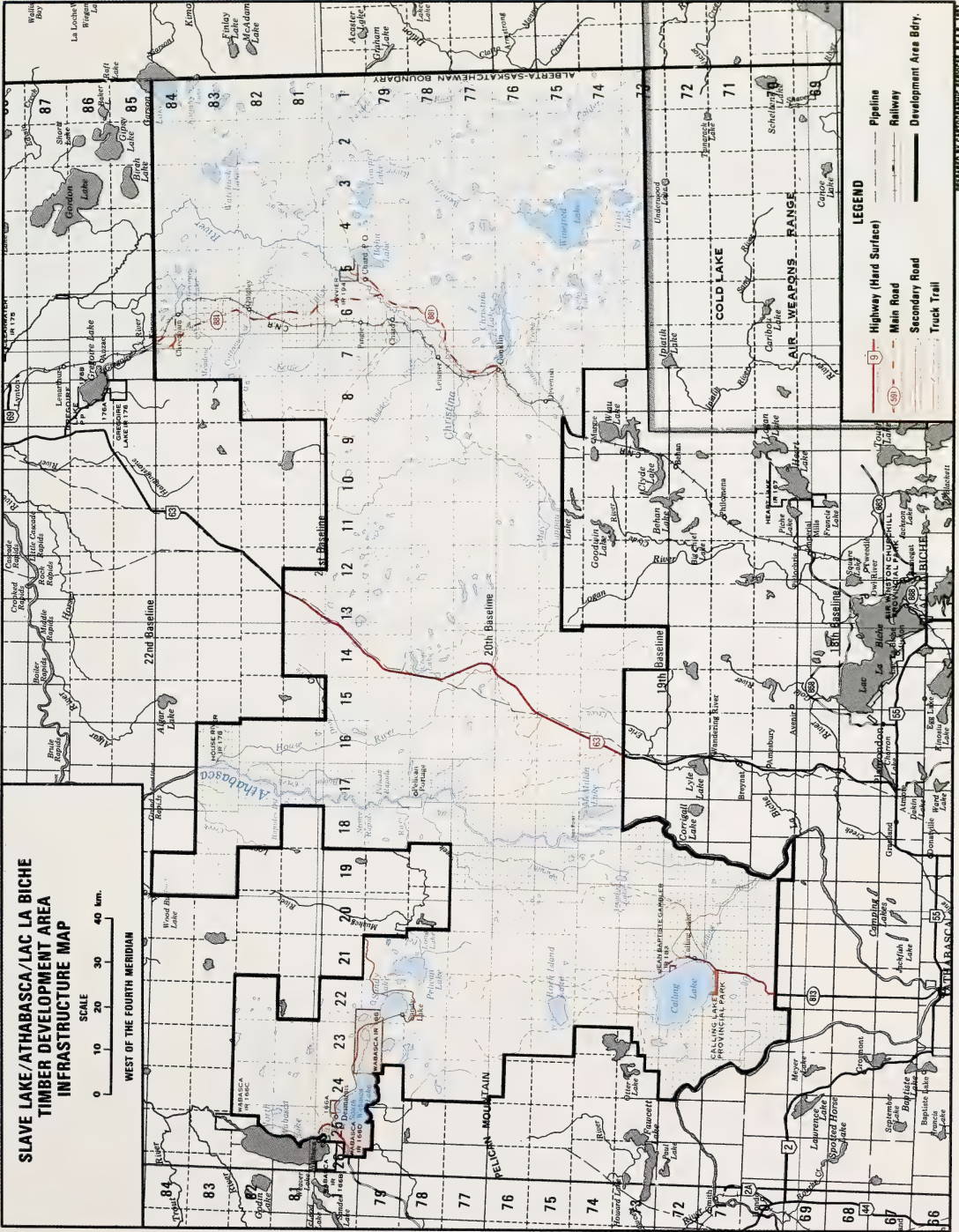
The town of Athabasca is located south of the Slave Lake/Athabasca/Lac La Biche Timber Development Area. Athabasca's positive attitude and available infrastructure provide the

necessary ingredients for economic development. The economic base of Athabasca is derived from agriculture, forest products, gas, oil and coal. A profile of the community is given below:

POPULATION	1,933
LABOUR FORCE - male	450
- female	340
- a number of independent logging contractors, with considerable woods operation experience, are located in Athabasca.	
DISTANCE FROM MAJOR CENTRES	146 kilometers (91 miles) north of Edmonton
CONNECTING HIGHWAYS	#2 - high standard, paved.
RAILWAY	Canadian National Railway
AIRPORT - longest runway	912 meters (3,000 feet) paved surface, night operation
WATER - major river - Athabasca	Flow rate 703 cubic metres/second (24,826 cubic feet/second) average from May to October
ELEVATION	560 meters (1,842 feet)
TEMPERATURE - seasonal averages	winter -17.9° centigrade (0°F) summer 16.2° centigrade (61.3°F)

ANNUAL PRECIPITATION - rain	352.6 millimeters (13.88 inches)
- snow	140.6 centimeters (55.35 inches)
- total	493.1 millimeters (19.41 inches)
FROST FREE DAYS	111
ELECTRICAL POWER - industrial rates	Trans Alta Utility Corp. \$8.76 - \$15.17 per month per kilowatt dependent on demand plus \$0.009 - \$0.016 per kilowatt-hour energy charge.
NATURAL GAS - industrial rates	I.C.G. (Plains Western) \$7.50 - \$200.00 per month fixed charge plus \$3.164 - \$3.474 per thousand cubic feet. The rates vary according to consumption.
MILL RATE - industrial	\$28.79/\$1000 assessed tax value
- residential	\$24.59/\$1000 assessed tax value
PER CAPITA DEBT	\$1,044.00
MEDICAL	1 Hospital (50 beds) 5 Doctors 2 Dentists
EDUCATION	1 Day Care/Nursery 1 Elementary (Grades 1 - 6) 1 Junior High (Grades 7 - 9) 1 High School (Grades 10 - 12) 1 University
RECREATION	Baseball, Curling, Hunting, Skiing, Skating, Golf, Fishing, Boating, Swimming, Tennis, Camping, Rifle Range

INFRASTRUCTURE MAP



PREPARED BY CARTOGRAPHIC SERVICES, ATLAS, 1987

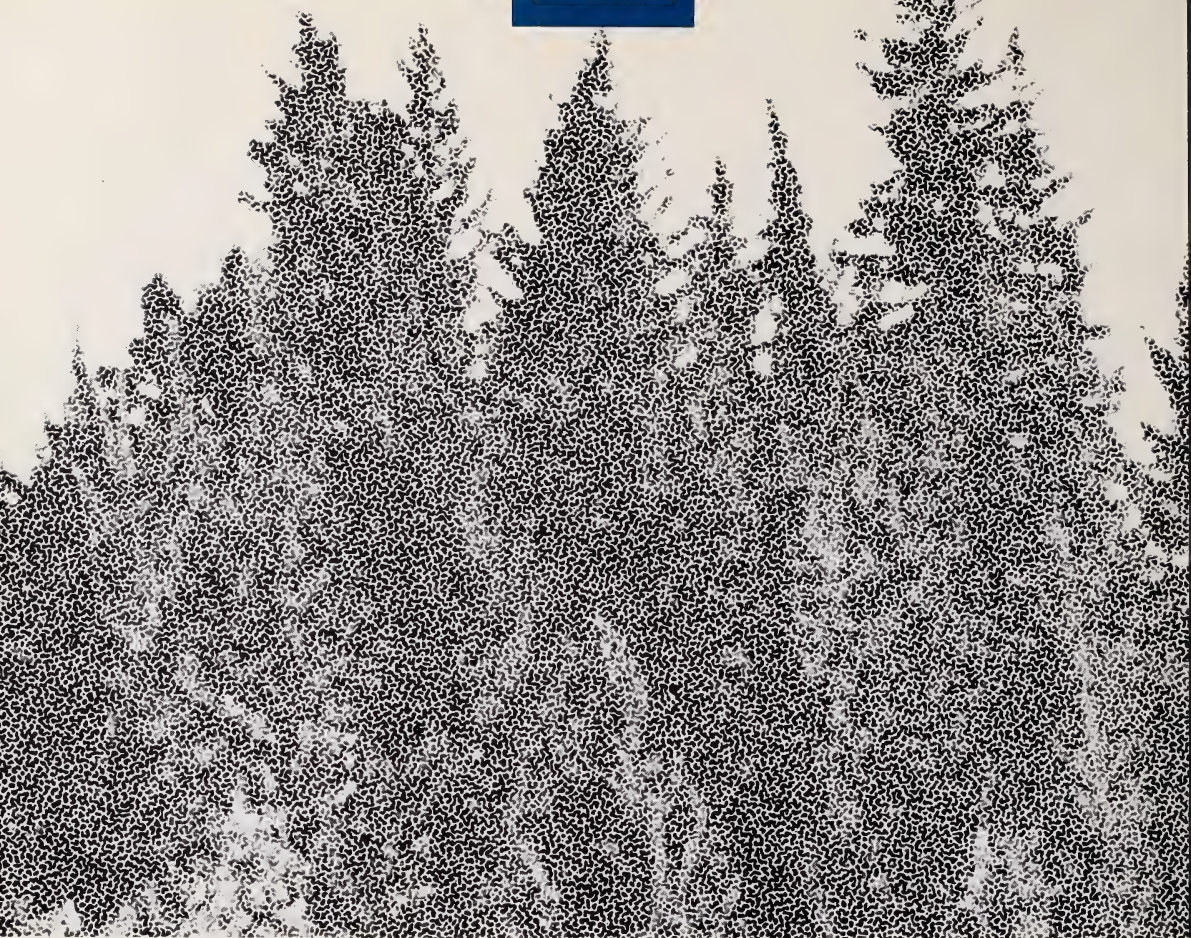
CONTACTS

To assist prospective applicants in preparing their proposal for the Timber Development Area, a list of contact persons with Alberta Forestry, Lands and Wildlife is included.

Department	Contact Person
Alberta Forestry, Lands and Wildlife 9915 - 108 Street Edmonton, Alberta T5K 2C9	Mr. F.W. McDougall Deputy Minister Forestry, Lands and Wildlife (403) 427-3552
	Mr. C.B. Smith Assistant Deputy Minister Alberta Forest Service (403) 427-3542

Also, in order to meet the growing demands of the forest industry the Forest Industry Development Division was organized within the Department of Forestry, Lands and Wildlife. The role of this new division is to assist new and existing forest companies and private investors to upgrade and utilize Alberta's vast uncommitted forest resources for a variety of forest products. The division is made up of people that can offer expertise in all aspects of forestry.

Mr. J.A. Brennan
Executive Officer
Forest Industry Development Division
930, 9942 - 108 Street
Edmonton, Alberta
T5K 2J5
(403) 422-7011





BOYLE LAC LA BICHE

TIMBER DEVELOPMENT AREA







BOYLE
LAC LA BICHE
TIMBER DEVELOPMENT AREA



THE FOREST RESOURCE

Alberta's reserves constitute the largest supply of coniferous and deciduous timber available in North America. The Boyle/Lac La Biche Timber Development Area (TDA) is one of Alberta's best aspen (poplar) development opportunities. The development of areas similar to the Boyle/Lac La Biche TDA has made Alberta a dynamic force in the forest industry in Canada, and around the world. Alberta's primary hardwood species, trembling aspen (*Populus tremuloides*), predominates in the Boyle/Lac La Biche area, and is suitable for the production of waferboard, oriented strandboard, particleboard and other panel products.

Boyle/Lac La Biche Timber Development Area Forest Resource Overview

Deciduous Annual Allowable Cut	384,846 cubic meters (89,669,000 board feet)
Gross Area	677,207 hectares (1,672,701 acres)

QUALITY OF RESOURCE

The Boyle/Lac La Biche Timber Development Area is located in north eastern Alberta, approximately 219 kilometers (137 miles) northeast of Edmonton. The total area of the Boyle/Lac La Biche TDA is 677,207 hectares (1,672,701 acres), and can be broken down by productivity classes as follows:

Productive	384,962 hectares (950,856 acres)
Potentially Productive	4,589 hectares (11,335 acres)
Non-productive	287,656 hectares (710,510 acres)

The forest cover in the TDA is primarily hardwood, with trembling aspen predominating. The trembling aspen volume in the area is 13 million cubic meters (3.0 billion board feet). Growth rates in aspen range up to 2.41 cubic meters/hectare/year (228 board feet/acre/year) at 90 years of age. In mature and overmature stands likely to be harvested over the next 20 years, the approximate average tree size is 22.2 meters (72.8 feet) in height, and 25.3 centimeters (10.0 inches) in diameter at breast height. The average volume per tree is 0.43 cubic meters (100 board feet - "Alberta log rule").

For deciduous stands at or near maturity, advanced decay percentages range from 2.9 to 6.7 percent. The amount of decay is highly variable and is influenced by a number of factors including site quality, tree growth,

genetic constitution, stand density and age. For deciduous stands a high decay and subsequent mortality usually occurs after 100 years of age, with most stands having little or no deciduous volume at 180 years.

CULL PERCENTAGE (FOR PULP UTILIZATION)

- for deciduous stands likely to be harvested over the next 20 years

HEIGHT		CULL (as a percent of gross volume*)
METERS	FEET	
12 - 17	40 - 59	2.9
18 - 24	60 - 79	6.7
24 - 30	80 - 99	5.8

* 15 centimeters (6 inch) stump diameter and greater.

WOOD SUPPLY

DECIDUOUS WOOD SUPPLY -

Annual Allowable Cut	Committed	Uncommitted
384,846	0	384,846
cubic meters	cubic meters	cubic meters
(89,669,000		(89,669,000
board feet)		board feet)

Ninety percent of this wood supply is available in pure stands of aspen. The remainder is found in aspen-conifer mixedwood stands. This is readily available through integrated harvesting of the mixed stands in conjunction with coniferous timber operators in the area. The timber operator is:

Quota Holder	Address
Ed Bobocel	Box 1150
Lumber Co.	Lac La Biche,
Ltd.	Alberta
	T0A 2C0

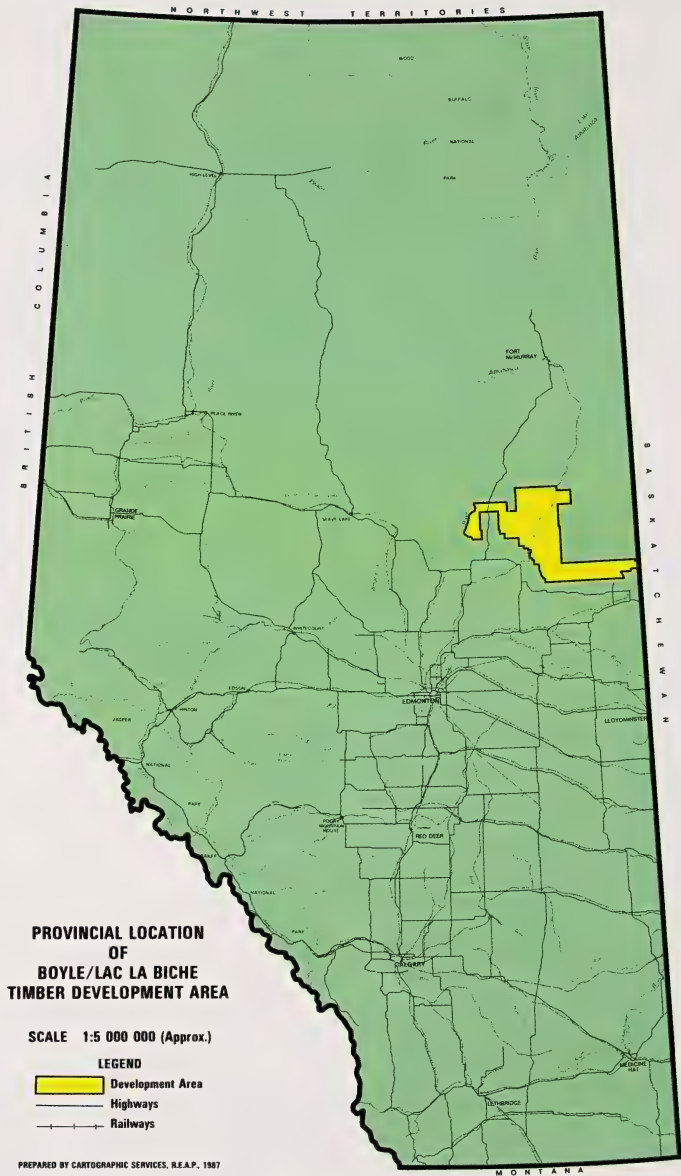
In addition to the supply of roundwood in the Timber Development Area there is a significant supply of aspen on private lands and Metis Settlements adjacent to the Boyle/Lac La Biche TDA. The resource is significant in terms of its extent and proximity to the TDA. The developer of the TDA would be able to obtain this additional wood supply through purchase agreements with the Metis colonies and private land owners.

RESEARCH & DEVELOPMENT

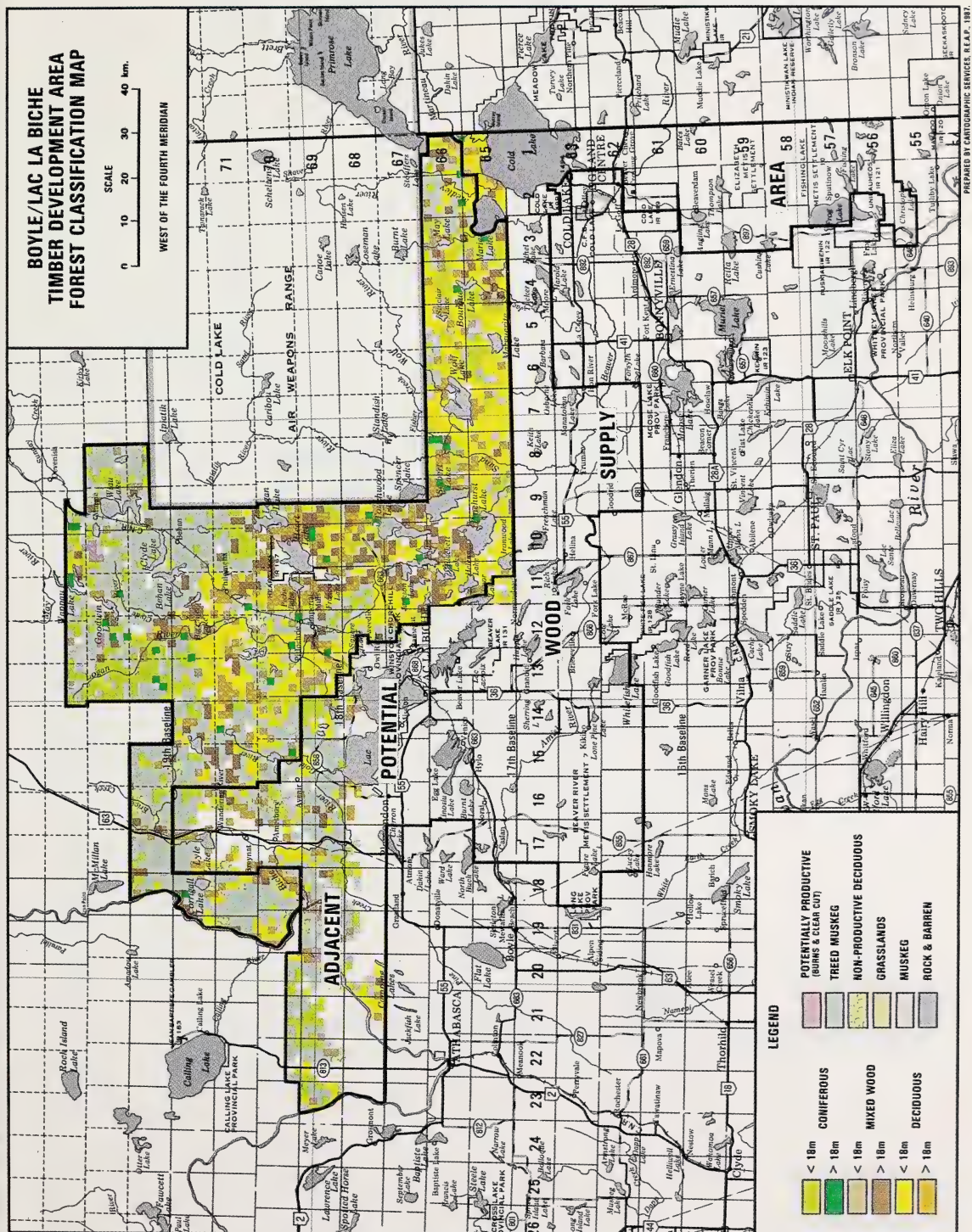
A recent study by Morrison-Knudsen concluded that it is both technically and economically feasible to produce oriented strandboard (OSB) from sawmill residues namely slabs, edgings and pulp chips. The process involves maxi-chipping residues, followed by ring flaking and the use of Morrison-Knudsen's patented electrostatic orientator in the forming line. Incorporation of this type of system would eliminate the need for a full fledged green log yard and ancilliary equipment thus reducing capital costs of a new plant by at least 10%.



TDA LOCATION



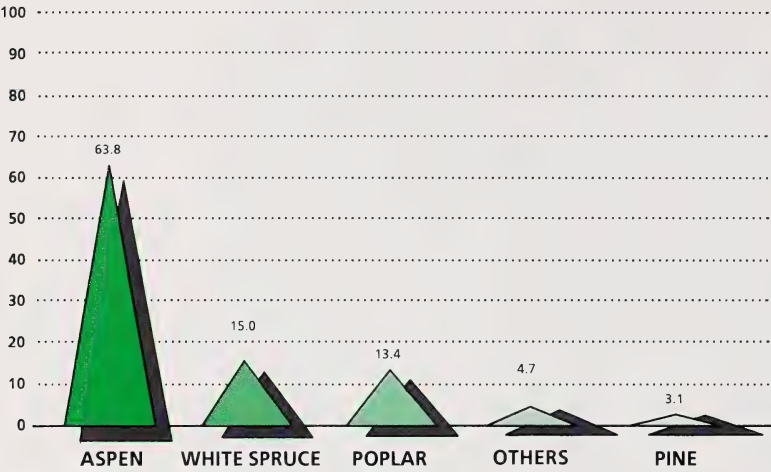
CLASSIFICATION MAP



DECIDUOUS LAND BASE

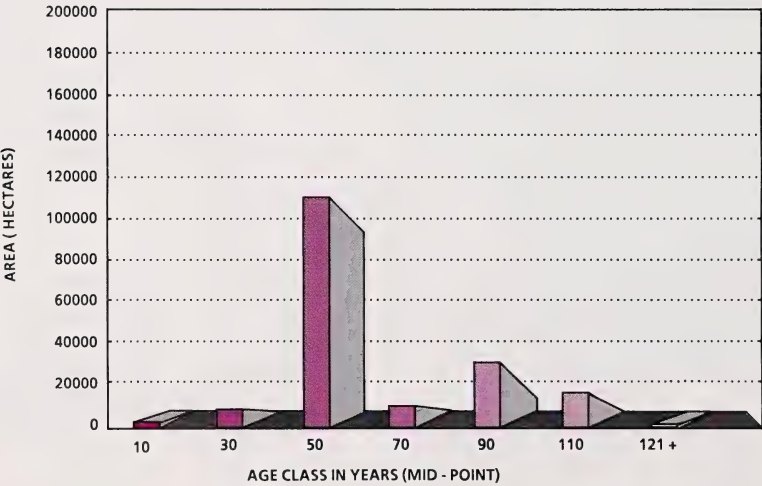
PERCENT VOLUME BY SPECIES

BOYLE/LAC LA BICHE TDA



AREA BY AGE CLASS

BOYLE/LAC LA BICHE TDA



STAND/STOCK TABLE**MATURE DECIDUOUS LAND BASE****Utilization Standards:** Minimum Stump Diameter = 15 cm (6 inch)

Minimum Top Diameter (inside bark) = 10 cm (4 inch)

DBH (CM)	DBH (INCH)	NS/HA	NS/ACRE	GROSS VOLUME (CU M/HA)	GROSS VOLUME (FBM/AC)
12	4.7	108	44	NIL	NIL
14	5.5	79	32	3	283
16	6.3	81	33	6	566
18	7.1	56	23	7	660
20	7.9	48	19	9	849
22	8.7	46	19	11	1,038
24	9.4	41	17	13	1,226
26	10.2	39	16	16	1,509
28	11.0	29	12	15	1,415
30	11.8	29	12	17	1,604
32	12.6	21	9	15	1,414
34	13.4	16	7	13	1,226
36	14.2	13	5	12	1,132
38	15.0	12	5	12	1,132
40	15.7	8	3	9	849
42	16.5	6	2	7	660
44	17.3	4	2	6	566
46	18.1	3	1	5	472
48	18.9	2	1	4	377
50	19.7	2	1	3	283
52	20.5	1	0	2	189
54	21.3	1	0	1	94
AVERAGE DBH			19.9 centimeters		
AVERAGE HEIGHT			20.3 meters		
GROSS VOLUME/TREE			.245 cubic meters		
CULL %			4.40		

CM = CENTIMETERS

DBH = DIAMETER BREAST HEIGHT

NS = NUMBER OF STEMS

HA = HECTARE

CU M/HA = CUBIC METERS/HECTARE

FBM/AC = BOARD FEET/ACRE

PROVINCIAL FULLY STOCKED YIELD TABLES**HARDWOODS MEDIUM SITE****Utilization Standards:** Minimum Stump Diameter = 15 cm (6 inch)

Minimum Top Diameter (inside bark) = 10 cm (4 inch)

TOTAL AGE (YR)	TOP HEIGHT (M)	TOP HEIGHT (FT)	GROSS VOLUME (CU M/HA)	GROSS VOLUME (MFBM/AC)	GROSS MAI (CU M/HA/YR)	GROSS VOLUME (FBM/AC/YR)	NO. OF TREES (PER HA)	NO. OF TREES (PER AC)
10	4.2	13.7	0.0	0.0	0.0	0.0	0	0
20	9.0	29.4	0.0	0.0	0.0	0.0	0	0
30	12.7	41.5	0.0	0.0	0.0	0.0	0	0
40	15.5	50.8	7.8	0.7	0.19	18.3	138	56
50	17.7	58.1	70.0	6.6	1.40	131.9	544	220
60	19.5	63.8	119.3	11.3	1.99	187.5	617	250
70	20.9	68.4	158.4	15.0	2.27	214.0	615	249
80	22.0	72.1	190.9	18.0	2.39	225.0	592	240
90	22.9	75.3	217.1	20.5	2.41	227.5	565	229
100	23.7	77.9	238.9	22.5	2.39	225.3	540	219

CM = CENTIMETERS

YR = YEARS

M = METERS

FT = FEET

CU M/HA = CUBIC METERS/HECTARE

CU M/HA/YR

MAI

FBM/AC/YR

HA

AC

= CUBIC METERS/HECTARE/YEAR

= MEAN ANNUAL INCREMENT

= BOARD FEET/ACRE/YEAR

= HECTARE

= ACRE

COMMUNITY PROFILE - LAC LA BICHE

The town of Lac La Biche is strategically located south of the Boyle/Lac La Biche Timber Development Area. The town of Lac La Biche is situated on the shores of Lac La Biche and offers a wide array of commercial and recreational opportunities. Lac La Biche has a

positive attitude towards economic development. The economic base of Lac La Biche is very diverse and includes industries such as agriculture, oil and gas, forestry, commercial fishing and tourism. A profile of the community is given below:

POPULATION	2,242
LABOUR FORCE - male	550
- female	450
- a number of independent logging contractors, with considerable woods operation experience, are located in Lac La Biche.	
DISTANCE FROM MAJOR CENTRES	219 kilometers (137 miles) northeast of Edmonton 290 kilometers (180 miles) south of Fort McMurray
CONNECTING HIGHWAYS	#55, high standard, paved #36, high standard, paved
RAILWAY	Canadian National Railway
AIRPORT - longest runway	1,765 meters (5,800 feet) paved surface, night operation
WATER	The town of Lac La Biche is located at the southern end of Lac La Biche
ELEVATION	561 meters (1,839 feet)
TEMPERATURE - seasonal averages	winter -18.4° centigrade (-1.1°F) summer +17.0° centigrade (62.6°F)
ANNUAL PRECIPITATION - rain	365.1 millimeters (14.4 inches)
- snow	207.6 centimeters (81.7 inches)
- total	562.2 millimeters (22.1 inches)
FROST FREE DAYS	105
ELECTRICAL POWER - industrial rates	Trans Alta Utilities Corporation \$8.76 - \$15.17 per month per kilowatt dependent on demand plus \$0.009 - \$0.016 per kilowatt-hour energy charge.
NATURAL GAS - industrial rates	Town of Lac La Biche Natural Gas System \$3.13/gigajoule per month plus a \$12.00 service charge per month.
MILL RATE - industrial	\$38.185/\$1000 assessed tax value
- residential	\$28.202/\$1000 assessed tax value
PER CAPITA DEBT	\$1,757.00 (1983)
MEDICAL	1 Hospital (100 beds) 7 Doctors 2 Dentists

EDUCATION

- 1 Daycare/Nursery
- 2 Elementary (Grades 1 - 6)
- 1 Junior High (Grades 7 - 9)
- 1 High School (Grades 10 - 12)
- Alberta Vocational Centre

RECREATION

Curling, Skiing, Tennis, Skating, Boating, Snow-mobiling, Baseball, Fishing, Rifle Range, Golf, Hunting, Camping

COMMUNITY PROFILE - ATHABASCA

The town of Athabasca is located south of the Boyle/Lac La Biche Timber Development Area. Athabasca's positive attitude and available infrastructure provide the necessary ingredients

for economic development. The economic base of Athabasca is derived from agriculture, forest products, gas, oil and coal. A profile of the community is given below:

POPULATION

1,933

LABOUR FORCE

- male
- female
- a number of independent logging contractors, with considerable woods operation experience, are located in Athabasca.

450
340

DISTANCE FROM MAJOR CENTRES

146 kilometers (91 miles) north of Edmonton

CONNECTING HIGHWAYS

#2, high standard, paved.

RAILWAY

Canadian National Railway

AIRPORT - longest runway

912 meters (3,000 feet)
paved surface, night operation

WATER - major river - Athabasca

Flow rate 703 cubic metres/second
(24,286 cubic feet/second)
average from May to October

ELEVATION

560 meters (1,842 feet)

TEMPERATURE - seasonal averages

winter -17.9° centigrade (0°F)
summer 16.2° centigrade (61.3°F)

ANNUAL PRECIPITATION

- rain
- snow
- total

352.6 millimeters (13.88 inches)
140.6 centimeters (55.35 inches)
493.1 millimeters (19.41 inches)

FROST FREE DAYS

111

ELECTRICAL POWER - industrial rates

Trans Alta Utility Corp.
\$8.76 - \$15.17 per month per kilowatt dependent on demand plus \$0.009 - \$0.016 per kilowatt-hour energy charge.

NATURAL GAS - industrial rates

I.C.G. (Plains Western)

\$7.50 - \$200.00 per month fixed charge plus \$3.164 - \$3.474 per thousand cubic feet. The rates vary according to consumption.

MILL RATE - industrial
- residential

\$28.79/\$1000 assessed tax value

\$24.59/\$1000 assessed tax value

PER CAPITA DEBT

\$1,044.34

MEDICAL

1 Hospital (50 beds)

5 Doctors

2 Dentists

EDUCATION

1 Daycare/Nursery

1 Elementary (Grades 1 - 6)

1 Junior High (Grades 7 - 9)

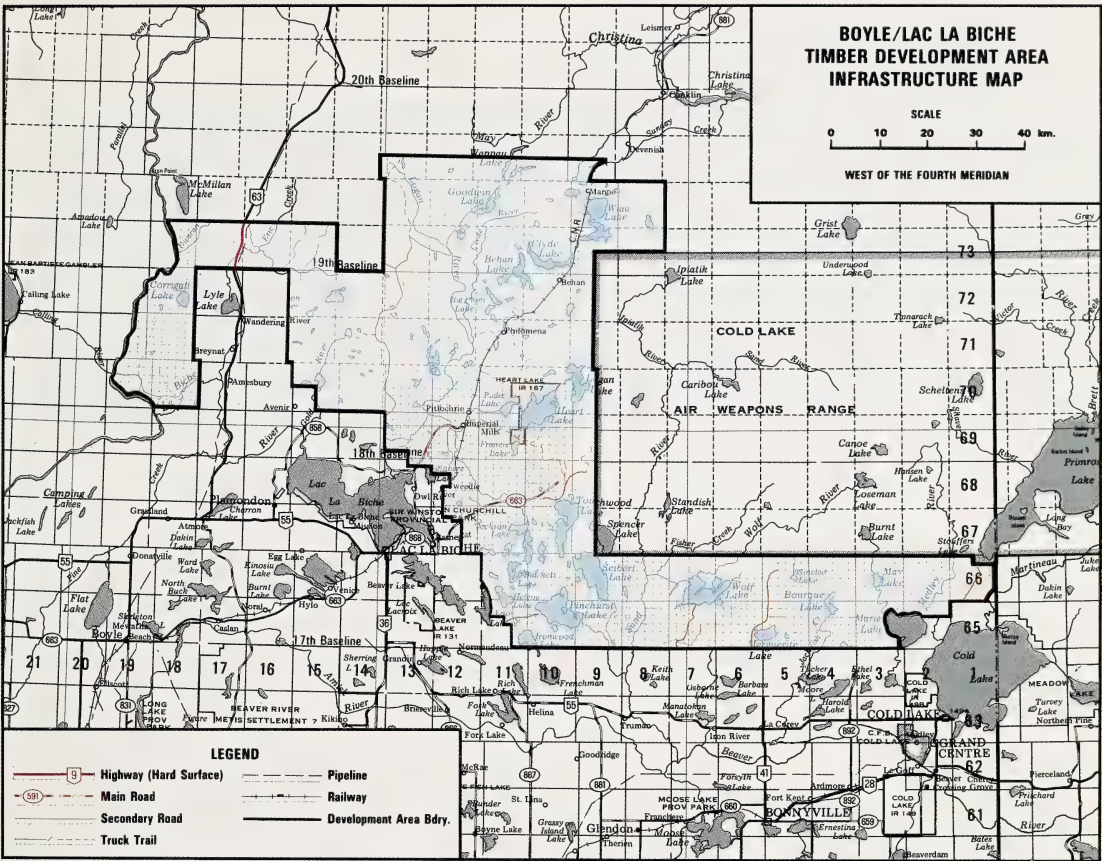
1 High School (Grades 10 - 12)

1 University

RECREATION

Baseball, Curling, Hunting, Skiing, Skating, Golf, Fishing, Boating, Swimming, Tennis, Camping, Rifle Range

INFRASTRUCTURE MAP





CONTACTS

To assist prospective applicants in preparing their proposal for the Boyle/Lac La Biche Timber Development Area, a list of contact persons with Alberta Forestry, Lands and Wildlife is included.

Department	Contact Person
Alberta Forestry, Lands and Wildlife 9915 - 108 Street Edmonton, Alberta T5K 2C9	Mr. F.W. McDougall Deputy Minister Forestry, Lands and Wildlife (403) 427-3552
	Mr. C.B. Smith Assistant Deputy Minister Alberta Forest Service (403) 427-3542

Also, in order to meet the growing demands of the forest industry the Forest Industry Development Division was organized within the Department of Forestry, Lands and Wildlife. The role of this new division is to assist new and existing forest companies and private investors to upgrade and utilize Alberta's vast uncommitted forest resources for a variety of forest products. The division is made up of people that can offer expertise in all aspects of forestry.

Mr. J.A. Brennan
Executive Officer
Forest Industry Development Division
930, 9942 - 108 Street
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T5K 2J5
(403) 422-7011





HIGH LEVEL FORT VERMILION

TIMBER DEVELOPMENT AREA







HIGH LEVEL FORT VERMILION

TIMBER DEVELOPMENT AREA



THE FOREST RESOURCE

Alberta's reserves constitute the largest supply of coniferous and deciduous timber available in North America. This Timber Development Area (TDA) is one of Alberta's best aspen-spruce mixedwood development opportunities. Because areas similar to the High Level/Fort Vermilion TDA have already been developed, Alberta has become a dynamic force in the forest industry in Canada, and around the world. The predominant species in the TDA area is trembling aspen (*Populus tremuloides*), followed by white spruce (*Picea glauca*). The aspen is found in pure stands and in mixedwood stands where it is associated with white spruce and to a lesser extent pine. This species combination is suitable for production of high quality pulp, newsprint or other related products.

High Level/Fort Vermilion Timber Development Area Resource Overview

Deciduous Annual Allowable Cut	931,600 cubic meters (217,063,000 board feet)
Coniferous Annual Allowable Cut	497,700 cubic meters (115,964,000 board feet)
Total Annual Allowable Cut	1,429,300 cubic meters (333,027,000 board feet)
Gross Area	4,776,229 hectares (11,797,286 acres)

QUALITY OF RESOURCE

The High Level/Fort Vermilion Timber Development Area is located in north western Alberta, approximately 734 kilometers (460 miles) north west of Edmonton. The total area of the TDA is 4,776,229 hectares (11,797,286 acres), and can be broken down by productivity class as follows:

Productive	2,755,666 hectares (6,806,495 acres)
Potentially Productive	267,638 hectares (661,066 acres)
Non-productive	1,752,925 hectares (4,329,725 acres)

The forest cover in the TDA is a combination of hardwoods and softwoods. Trembling aspen (*Populus tremuloides*) and white spruce (*Picea glauca*) predominate. The trembling aspen and coniferous volume in the area is 38 million cubic meters (8.9 billion board feet) and 36 million cubic meters (8.4 billion board feet) respectively. Growth rates in aspen range up to 2.41 cubic meters/hectare/year (228 board feet/acre/year) at 90 years of age. In mature and overmature stands, likely to be harvested over the next 20 years, the approximate average aspen tree size is 22.6 meters (74.1 feet) in height, and 25.5

centimeters (10.0 inches) in diameter at breast height. The average volume per aspen tree is 0.44 cubic meters (103 board feet - "Alberta log rule"). Growth rates in coniferous stands range up to 2.43 cubic meters/hectare/year (229 board feet/acre/year) at maturity; little reduction in growth rate is evident in overmature stands. In stands ready to harvest over the next twenty years, average coniferous tree size is 23.4 meters (76.8 feet) in height, and 26.5 centimeters (10.4 inches) in diameter at breast height. Average volume per tree is 0.49 cubic meters (114 board feet - "Alberta log rule"). For deciduous stands at or near maturity, advanced decay percentages range from 2.0 to 10.0 percent, increasing with stand height. The amount of decay present is highly variable and is influenced by a number of factors including site quality, tree growth, genetic constitution, stand density and age. For deciduous stands a high decay and subsequent mortality occurs after 100 years of age, with most stands having little or no merchantable deciduous volume at 180 years. For coniferous stands at or near maturity, advanced decay percentages are remarkably low, particularly in slower growing stands. Even older stands are virtually defect free.



CULL PERCENTAGE (FOR PULP UTILIZATION)

- for stands likely to be harvested over the next 20 years

HEIGHT		CULL (as a percent of gross volume*)	
METERS	FEET	Coniferous	Deciduous
12 - 17	40 - 59	1.4	2.0
18 - 23	60 - 79	2.1	4.0
24 - 29	80 - 99	5.3	10.0

* 15 centimeters (6 inch) stump diameter and greater.

WOOD SUPPLY

The deciduous annual allowable cut is from the pure deciduous stands within the TDA. The coniferous annual allowable cut is available from the pure coniferous and the merchantable mixedwood stands within the conifer roundwood supply area.

In addition to the supply of roundwood in the Timber Development Area there is a significant supply of aspen on private lands and Metis Settlements adjacent to the TDA. The developer of the TDA would be able to obtain this additional wood supply through purchase agreements with the Metis colonies and private land owners.

CONIFEROUS WOOD SUPPLY - from the conifer roundwood supply area

Annual Allowable Cut	Committed	Uncommitted
516,800 cubic meters (120,414,000 board feet)	19,100 cubic meters (4,450,000 board feet)	497,700 cubic meters (115,964,000 board feet)

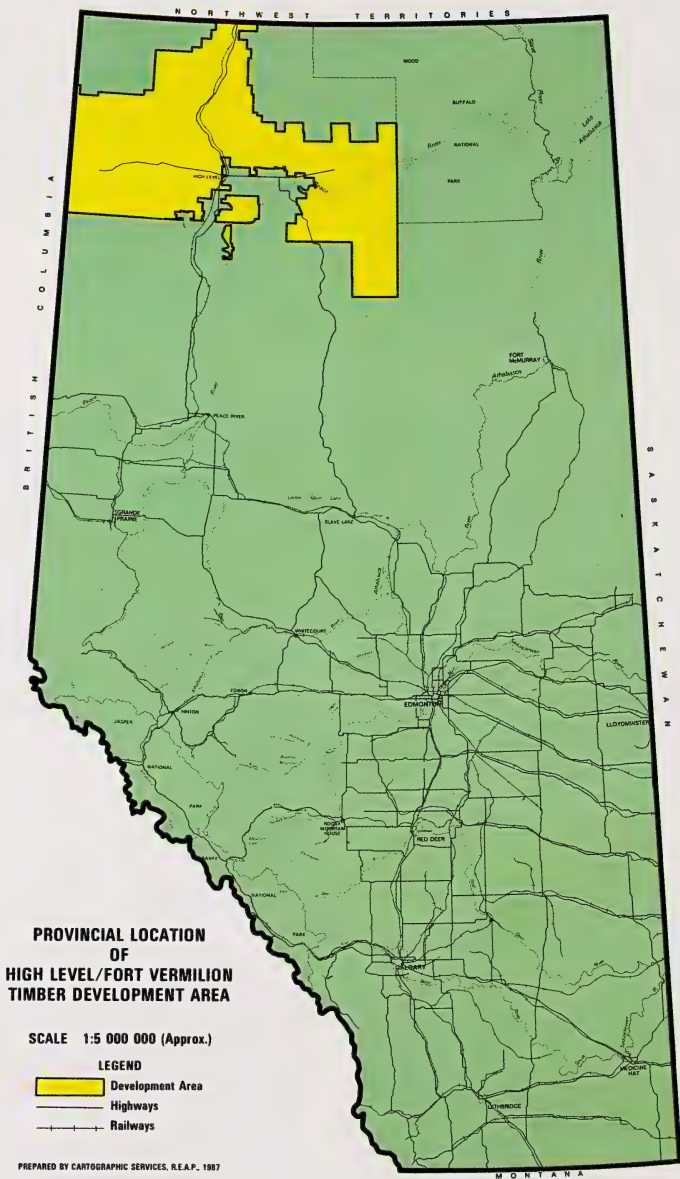
DECIDUOUS WOOD SUPPLY - from the entire TDA

Annual Allowable Cut	Committed	Uncommitted
931,600 cubic meters (217,063,000 board feet)	0 cubic meters	931,600 cubic meters (217,063,000 board feet)

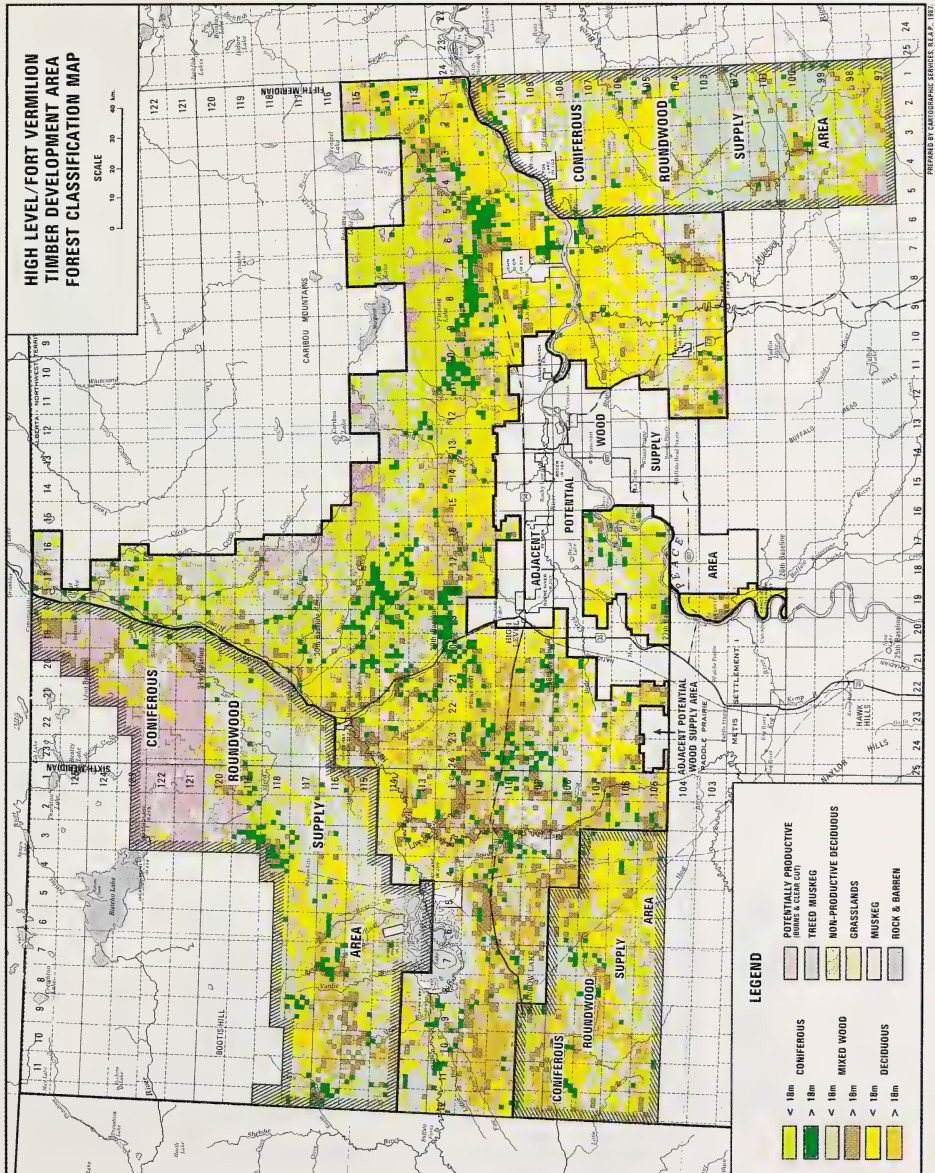
**Total wood
supply available
annually**

1,429,300 cubic meters

TDA LOCATION



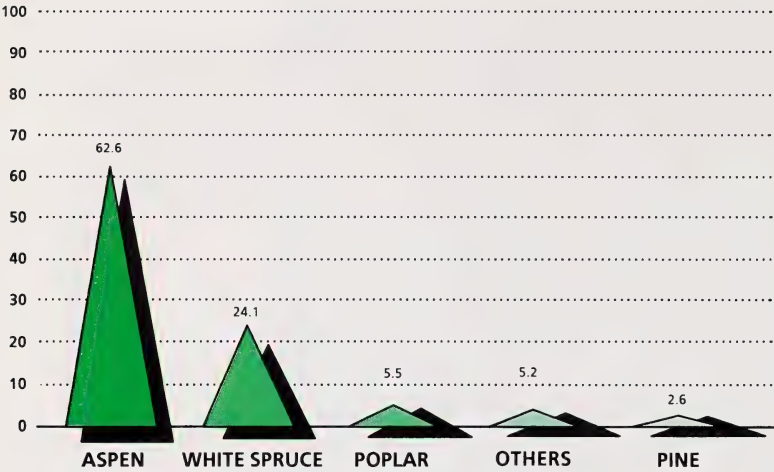
CLASSIFICATION MAP



DECIDUOUS LAND BASE

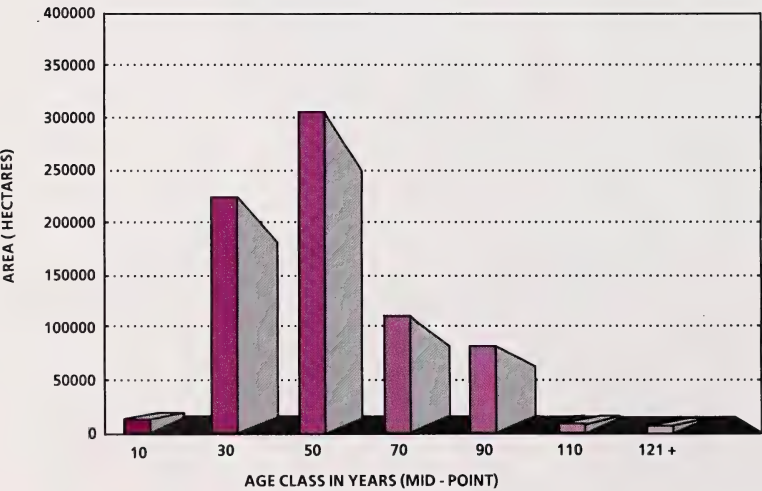
PERCENT VOLUME BY SPECIES

HIGH LEVEL/FORT VERMILION TDA



AREA BY AGE CLASS

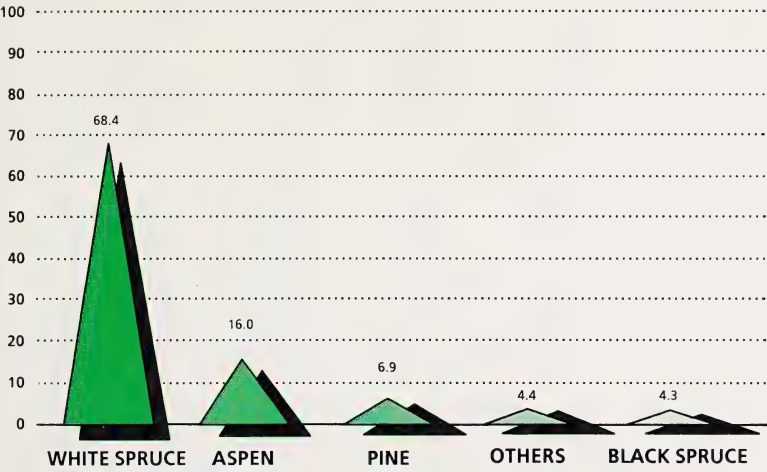
HIGH LEVEL/FORT VERMILION TDA



CONIFEROUS LAND BASE

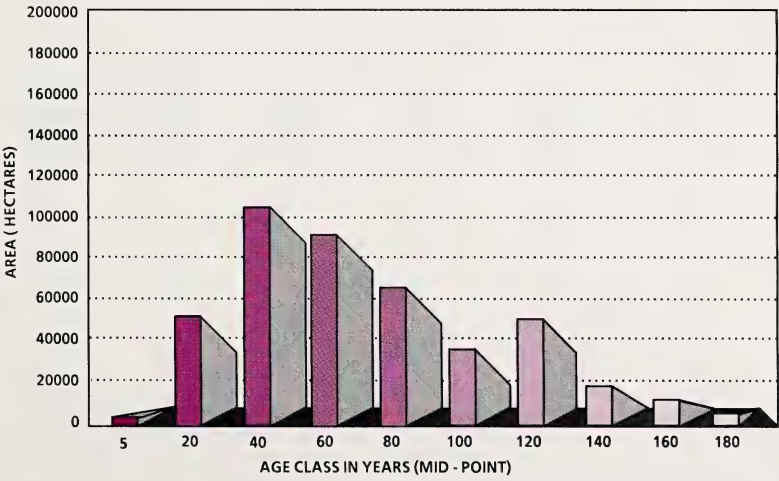
PERCENT VOLUME BY SPECIES

HIGH LEVEL/FORT VERMILION TDA



AREA BY AGE CLASS

HIGH LEVEL/FORT VERMILION TDA



PROVINCIAL FULLY STOCKED YIELD TABLES
WHITE SPRUCE MEDIUM SITE

Utilization Standards: Minimum Stump Diameter = 15 cm (6 inch)
Minimum Top Diameter (inside bark) = 10 cm (4 inch)

TOTAL AGE (YR)	TOP HEIGHT (M)	TOP HEIGHT (FT)	GROSS VOLUME (CU M/HA)	GROSS VOLUME (MFBM/AC)	GROSS MAI (CU M/HA/YR)	GROSS VOLUME (FBM/AC/YR)	NO. OF TREES (PER HA)	NO. OF TREES (PER AC)
10	0.0	0	0.0	0.0	0.0	0.0	0	0
20	1.8	6	0.0	0.0	0.0	0.0	0	0
30	4.6	15	0.0	0.0	0.0	0.0	0	0
40	7.6	25	0.0	0.0	0.0	0.0	0	0
50	10.6	35	1.6	0.2	0.03	3.1	35	8
60	13.4	44	50.6	4.8	0.84	79.5	404	93
70	15.9	52	97.8	9.2	1.40	131.7	537	123
80	18.2	60	141.9	13.4	1.77	167.3	597	137
90	20.3	66	182.5	17.2	2.03	191.2	622	143
100	22.1	72	219.2	20.7	2.19	206.8	629	144
110	23.7	78	252.2	23.8	2.29	216.3	627	144
120	25.1	82	281.8	26.6	2.35	221.5	620	142
130	26.3	86	308.1	29.1	2.37	223.6	611	140
140	27.5	90	331.6	31.3	2.37	223.4	601	138
150	28.5	93	352.6	33.3	2.35	221.7	590	135
160	29.4	96	371.3	35.0	2.32	218.9	580	133
170	30.2	99	388.1	36.6	2.28	215.4	571	131
180	30.9	101	403.2	38.0	2.24	211.3	562	129

CM
YR
M
FT
CU M/HA

= CENTIMETERS
= YEARS
= METERS
= FEET
= CUBIC METERS/HECTARE

CU M/HA/YR
MAI
FBM/AC/YR
HA
AC

= CUBIC METERS/HECTARE/YEAR
= MEAN ANNUAL INCREMENT
= BOARD FEET/ACRE/YEAR
= HECTARE
= ACRE

PROVINCIAL FULLY STOCKED YIELD TABLES
HARDWOODS MEDIUM SITE

Utilization Standards: Minimum Stump Diameter = 15 centimeters (6 inch)
Minimum Top Diameter (inside bark) = 10 centimeters (4 inch)

TOTAL AGE (YR)	TOP HEIGHT (M)	TOP HEIGHT (FT)	GROSS VOLUME (CU M/HA)	GROSS VOLUME (MFBM/AC)	GROSS MAI (CU M/HA/YR)	GROSS VOLUME (FBM/AC/YR)	NO. OF TREES (PER HA)	NO. OF TREES (PER AC)
10	4.2	13.7	0.0	0.0	0.0	0.0	0	0
20	9.0	29.4	0.0	0.0	0.0	0.0	0	0
30	12.7	41.5	0.0	0.0	0.0	0.0	0	0
40	15.5	50.8	7.8	0.7	0.19	18.3	138	56
50	17.7	58.1	70.0	6.6	1.40	131.9	544	220
60	19.5	63.8	119.3	11.3	1.99	187.5	617	250
70	20.9	68.4	158.8	15.0	2.27	214.0	615	249
80	22.0	72.1	190.9	18.0	2.39	225.0	592	240
90	22.9	75.3	217.1	20.5	2.41	227.5	565	229
100	23.7	77.9	238.9	22.5	2.39	225.3	540	219

CM
YR
M
FT
CU M/HA

= CENTIMETERS
= YEARS
= METERS
= FEET
= CUBIC METERS/HECTARE

CU M/HA/YR
MAI
FBM/AC/YR
HA
AC

= CUBIC METERS/HECTARE/YEAR
= MEAN ANNUAL INCREMENT
= BOARD FEET/ACRE/YEAR
= HECTARE
= ACRE



STAND/STOCK TABLE
MATURE LAND BASE

Utilization Standards: Minimum Stump Diameter = 15 cm (6 inch)
Minimum Top Diameter (inside bark) = 10 cm (4 inch)

DBH (CM)	DBH (INCH)	NS/HA	NS/ACRE	GROSS VOLUME (CU M/HA)	GROSS VOLUME (FBM/AC)
12	4.7	69	28	NIL	NIL
14	5.5	67	27	2	189
16	6.3	70	28	6	566
18	7.1	61	25	8	755
20	7.9	60	24	12	1,132
22	8.7	56	23	15	1,415
24	9.4	50	20	17	1,604
26	10.2	45	18	19	1,792
28	11.0	37	15	20	1,887
30	11.8	32	13	20	1,887
32	12.6	24	10	18	1,698
34	13.4	19	8	17	1,604
36	14.2	14	6	13	1,226
38	15.0	10	4	12	1,132
40	15.7	8	3	10	943
42	16.5	6	2	8	755
44	17.3	4	2	7	660
46	18.1	3	1	5	472
48	18.9	2	1	4	377
50	19.7	2	1	3	283
52	20.5	1	0	2	189
54	21.3	1	0	2	189
AVERAGE DBH			22.4 centimeters		
AVERAGE HEIGHT			22.3 meters		
GROSS VOLUME/TREE			0.339 cubic meters		
CULL %			3.91		

CM = CENTIMETERS
DBH = DIAMETER BREAST HEIGHT
NS = NUMBER OF STEMS

HA = HECTARE
CU M/HA = CUBIC METERS/HECTARE
FBM/AC = BOARD FEET/ACRE

COMMUNITY PROFILE - HIGH LEVEL

The town of High Level is strategically located within the Timber Development Area. High Level has a positive attitude towards economic development and it is in a position to

offer a full array of municipal services. The economic base of High Level is derived from oil and gas, timber and agriculture. A profile of the community is given below:

POPULATION	2,852
LABOUR FORCE - male	685
- female	540
- a number of independent logging contractors, with considerable woods operation experience, are located in High Level.	
DISTANCE FROM MAJOR CENTRES	734 kilometers (460 miles) northwest of Edmonton 296 kilometers (184 miles) north of Peace River
CONNECTING HIGHWAY	#35, high standard, paved.
RAILWAY	Great Slave Railway
AIRPORT - longest runway	1,524 meters (5,000 feet) paved surface, night operation
ELEVATION	332 meters (1,090 feet)
TEMPERATURE - seasonal averages	winter -24.6° centigrade (-12.3°F) summer +15.7° centigrade (+60.3°F)
ANNUAL PRECIPITATION - rain	257.9 millimeters (10.1 inches)
- snow	163.6 centimeters (64.4 inches)
- total	386.7 millimeters (15.2 inches)
FROST FREE DAYS	71
ELECTRICAL POWER - industrial rates	Alberta Power Ltd. \$7.05 - \$13.85 per month per kilowatt (depending on demand) plus \$0.012 - \$0.017 per kilowatt-hour energy charge. Rebates are available which may amount to as much as a 35% reduction in these rates.
NATURAL GAS - industrial rates	I.C.G. (Plains Western) \$7.50 - \$200.00 per month fixed charge plus \$2.65 - \$2.85 per thousand cubic feet. The rates vary according to consumption.
MILL RATE - industrial	\$38.24/\$1000 assessed tax value
- residential	\$30.00/\$1000 assessed tax value
PER CAPITA DEBT	\$1,457
MEDICAL	1 Hospital (25 beds) 5 Doctors 4 Dentists (mobile clinic)
EDUCATION	1 Kindergarten 1 Elementary (Grades 1 - 6) 1 Junior High (Grades 7 - 9) 1 High School (Grades 10 - 12) (all within the same school)
RECREATION	Swimming, Skating, Golf, Tennis, Hunting, Camping, Race track, Curling, Fishing



COMMUNITY PROFILE - FORT

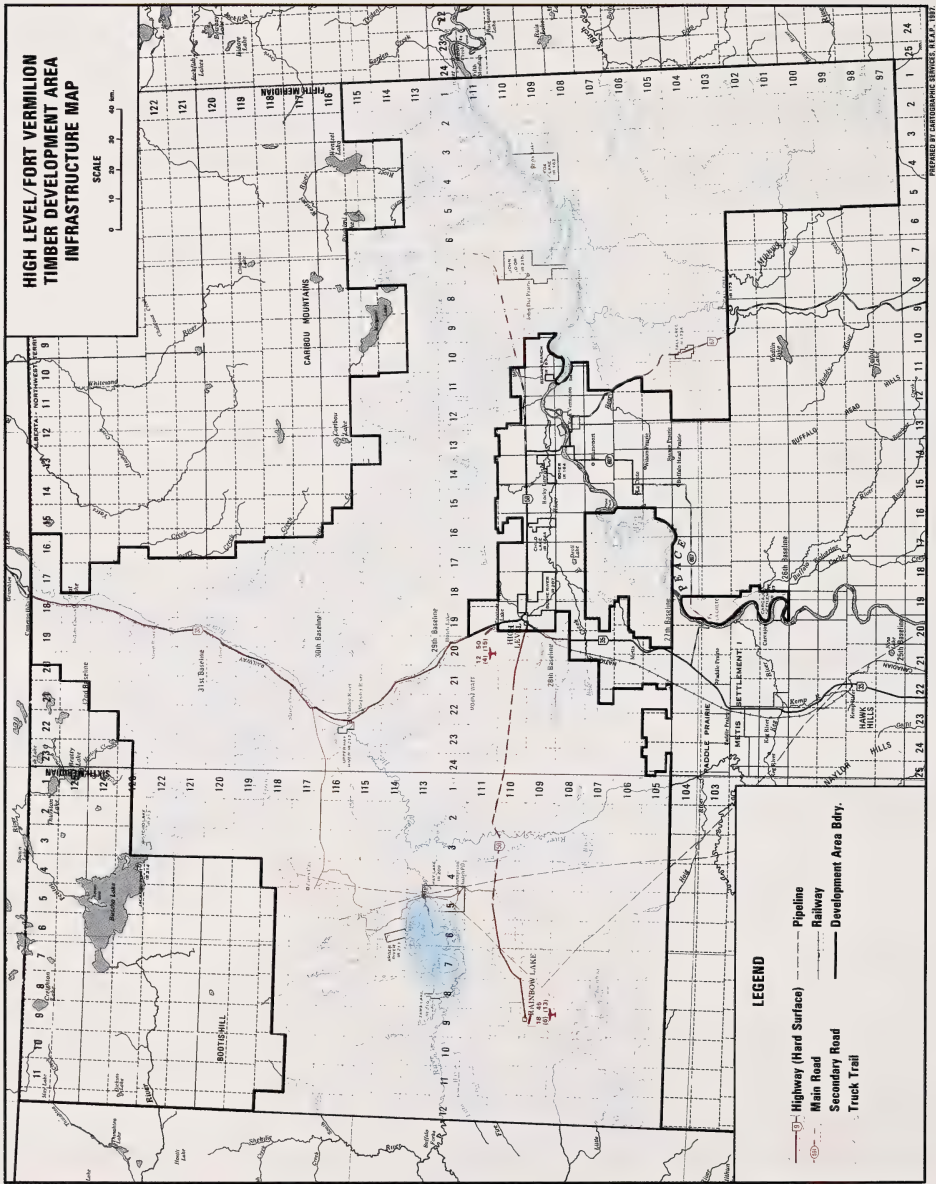
VERMILION

The town of Fort Vermilion is favourably located within the Timber Development Area. Fort Vermilion's positive attitude and available infrastructure provide the necessary ingredients for economic development. The economic base

of Fort Vermilion is derived from agriculture and timber.

POPULATION	775
LABOUR FORCE	Not available at this time
DISTANCE FROM MAJOR CENTRES	800 kilometers (497 miles) northwest of Edmonton 80 kilometers (50 miles) east of High Level
CONNECTING HIGHWAYS	#58, high standard, paved. #67, high standard, paved
RAILWAY	(Great Slave Railway at High Level)
AIRPORT - longest runway	915 meters (3,000 feet)
WATER - major river - Peace River	Flow rate 8,500 cubic metres/second (300,217 cubic feet/second) average from May to October
ELEVATION	278 meters (915 feet)
TEMPERATURE - seasonal averages	winter -23° centigrade (-10.8°F) summer 16.5° centigrade (61.7°F)
ANNUAL PRECIPITATION - rain	256.1 millimeters (10.1 inches)
- snow	130.3 centimeters (51.3 inches)
- total	382.5 millimeters (15.1 inches)
FROST FREE DAYS	97
ELECTRICAL POWER - industrial rates	Alberta Power Ltd. \$7.05 - \$13.85 per month per kilowatt depending on demand plus \$0.012 - \$0.017 per kilowatt-hour energy charge. Rebates are available which may amount to as much as a 35% reduction in these rates.
NATURAL GAS - industrial rates	Northern Lights Gas Co-op Ltd. \$3.25/gigajoule per month plus \$5.00 service charge per month. The rates indicated are approximate guidelines. Each application is dealt with on an individual basis as rates vary with consumption and seasonal demand requirements.
MILL RATE	not available at this time
MEDICAL	1 Hospital (36 beds) 3 Doctors 1 Dentist (twice weekly)
EDUCATION	2 Elementary (Grades 1 - 6) 2 Junior High (Grades 7 - 9)
RECREATION	Skating, Fishing, Baseball, Curling, Hunting, Boating, Camping

INFRASTRUCTURE MAP



CONTACTS

To assist prospective applicants in preparing their proposal for the High Level/Fort Vermilion Timber Development Area, a list of contact persons with Alberta Forestry, Lands and Wildlife is included.

Department	Contact Person
Alberta Forestry, Lands and Wildlife 9915 - 108 Street Edmonton, Alberta T5K 2C9	Mr. F.W. McDougall Deputy Minister Forestry, Lands and Wildlife (403) 427-3552
	Mr. C.B. Smith Assistant Deputy Minister Alberta Forest Service (403) 427-3542

Also, in order to meet the growing demands of the forest industry the Forest Industry Development Division was organized within the Department of Forestry, Lands and Wildlife. The role of this new division is to assist new and existing forest companies and private investors to upgrade and utilize Alberta's vast uncommitted forest resources for a variety of forest products. The division is made up of people that can offer expertise in all aspects of forestry.

Mr. J.A. Brennan
Executive Officer
Forestry, Lands and Wildlife
Forest Industry Development Division
930, 9942 - 108 Street
Edmonton, Alberta
T5K 2J5
(403) 422-7011



